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THE ORIGIN
OF THINGS

By the Same Author

THE SAVAGE HITS BACK
TENTS IN THE WILDERNESS

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THE ORIGIN OF THINGS

A Cultural History of Man

BY
JULIUS E. LIPS

Illustrations by EVA LIPS



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Preface

THE IMPETUS to write this book was perhaps unique. It seems to me that the social life of an anthropologist is more intimately interwoven with his profession than that of most other scientists. How often at dinners and cocktail parties some one has asked me: "You are an anthropologist? Now tell me everything about anthropology!"

Such a general wish is, naturally, not easy to satisfy, but upon rising from the table the inquirer would at least know that plates and forks, chairs and cosmetics, rings and bracelets, liquors and wines, are no inventions of a recent era, but that they go back to the dawn of time.

But more often the questions have not been of such a vague nature. Not only women but men have wished to know whether hair-styles, lipstick, and the many beauty tricks applied by our modern women are the inventions of the refinements and sophistication of recent times. People have been either disappointed or amused and satisfied to learn that these things are in fact thousands of years old and that even more cunning gadgets and preparations were used by so-called 'savages.'

When conversation, inspired by the events of the day, has turned to more serious matters, like social security and, especially, the ambiguous 'democracy,' these have been shown to be anything but modern achievements—to be, in fact, often rather inadequate imitations of similar systems established by humanity millenniums ago. Experts in modern communication, such as the newspaper and the radio, have been interested to hear that mankind has always found skilful means of notifying the public of important news events efficiently and speedily.

Indeed, I have been surprised at the lively interest shown in such revelations. This interest has been even more pronounced among my fellow-anthropologists and my teacher friends. Their encouragement to tell to the general public the origin of our modern tools, habits, traditions, and beliefs added considerably to the inspiration I began to feel, and many talks with students and younger folks opened my eyes to their specific interests. Naturally, I tried to find out what aspects of human culture are most directly connected with the problems of our time, and the fifteen chapters of this book are the result of my private poll on the special interests and curiosities of men and women in many walks of life.

But all this encouragement in itself would not have induced me to write this book if I had not felt strongly that it is the task of an anthropologist, especially in our days, to work in his field towards a closer understanding among peoples and cultures. The heritage we took over from primitive man is common to all races and nations. The common ground of all peoples revealed by the facts of anthropology should in the end contribute more towards the realization of One World. The early inventors and benefactors of human culture cannot be distinguished by colour of skin, nationality, or religion—they remain anonymous. But most of them have contributed more to human happiness than many a modern statesman.

The Second World War has brought us into contact with almost all peoples on earth, and a new Age of Discovery has aroused new interest in foreign peoples and foreign cultures. The discoveries in nuclear physics, on the other hand, have stressed anew the line of evolution and, perhaps, suggested the possibility of a destruction of all human civilization. This book has been written as a contribution towards the understanding of the development of human culture, and in an effort to promote mutual co-operation between peoples and cultures and, last but not least, in the hope that it may contribute to the realization of the One World for which we strive.

JULIUS E. LIPS

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CHAPTER ONE

Of Home and Hearth and Pots and Pans

LET US GO HOME" is a sanctified expression in any language. The outside world is seen as a struggle for existence, a contest to guard vital human relationships against the ravages of rain and cold and heat and the unpredictable influences of things and people. But inside it is good to feel sheltered among dear ones and to relax amid the intimate surroundings of the fireplace. There is no human race without a deep appreciation of the blessings of home, whatever its shape, and when night falls all human beings on earth—regardless of their particular faiths—like to close their eyes to rest in the spirit of the Cornish 'litany':

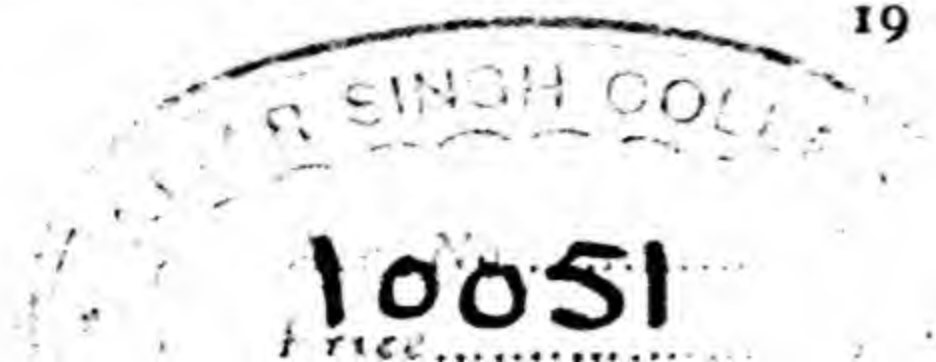
From ghoulies and ghosties
And long-legged beasties,
And things that go bump in the night,
Good Lord, deliver us.

Primitive man living in a world of animated things and ever-present spirits, and finding himself exposed to the immediate threats of nature, feels this desire more keenly than the civilized mind readily understands.

The older, the more primitive, a people, the more extensive is the area they consider their home. To most primitive peoples it is not the more or less temporary structure which shelters the family from night and from wind and rain that is the basic expression of 'home,' but rather the tribal land in its entirety. Any intruder who dares to set foot on its sacred soil pays with his life for his trespass. The plots on which individual families erect their shelters for the night are not important; the land is their home. The land belongs to all, and all belong to the land which the tribe claims as its own.

What is the form of the most ancient human habitation? Is the 'cave man' as depicted in newspaper cartoons really the earliest home-owner? Not at all. The fact that scientists have found many of the earliest possessions of man in caves, where preservation was best maintained through the millenniums, has misled the layman to believe that the cave was prehistoric man's first solution to his housing problem. This notion is an underestimation of human ingenuity. It makes no allowance for climatic and geographic influences on the choice of shelters.

The existence of caves in a region was by no means a prerequisite



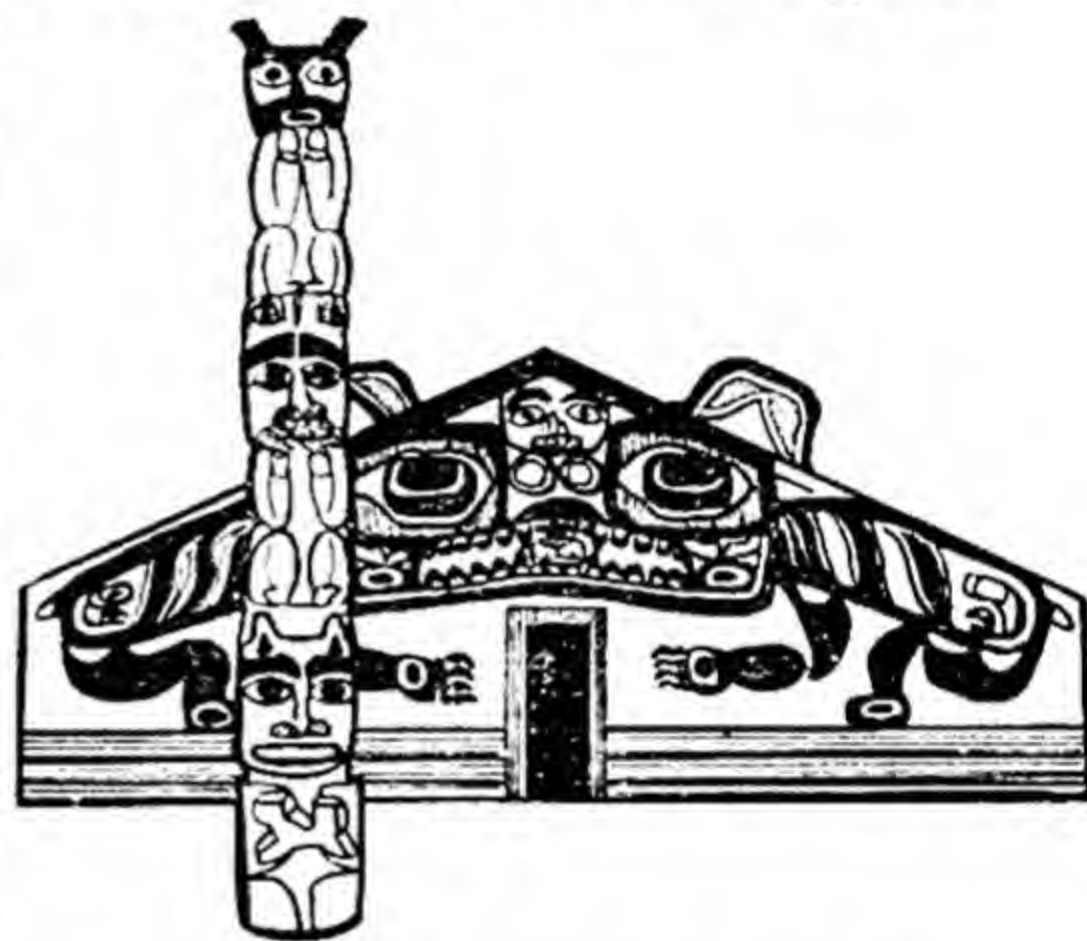
of human settlement ; more material evidences of prehistoric home life have been found in open places than in caves. Wherever caves or grottoes were chosen as abodes there was a special reason for their suitability, such as the severity of climate at the peaks of the glacial periods like the so-called Mousterian epoch, or the requirements of the hunt for game, abundant in alpine regions. The man of the European 'bone culture' whose prey was the cave bears (*Ursus spelæus*) followed them into the high alps where he therefore made his home. The highest dwelling of this type is the so-called "Dragon Hole" near Vättis (Switzerland), which lies 8000 feet above sea-level. But those contemporaries of this alpine hunter whose game were animals of the lower regions did not dwell in caves. There is no evidence that peoples of the palæolithic pre-Chellean culture, for instance, ever lived in caves. Troglodytism, or cave life, was either a temporary necessity or, even more often, a mere adjunct to the customary life in hand-built abodes. The best-known prehistoric caves discovered and described by modern scientists—Le Moustier in the French Vézère Valley, Font-de-Gaume in the Dordogne, Le Mas D'Azil (Ariège), the grotto of Aurignac (Haute-Garonne), and the ancient Italian and Spanish caves—reveal the very interesting fact that their main purpose was not to serve as family homes but rather as community houses or, if we may use the term in this connexion, as churches. While the space near their entrances occasionally served temporal purposes, the inner halls show sacred paintings of religious and magic significance ; and remains of altars with displays of animal skulls indicate clearly that they were halls of worship. Only the front parts of the caves were occasionally used for dwellings, and, even then, the half-open shelter under overhanging rock gables at the entrances was apparently preferred.

Among the most primitive tribes of our time who still live on the cultural level of the Stone Age—and there are many—only the Veddas of Ceylon and the Toala of Celebes show a preference for troglodytic homes, because caves are abundant in their territories. Most tribes equally ancient prefer the windbreak, that oldest 'house' of warm climates, the use of which was very common among the brethren of the 'cave men' of palæolithic times. Its flimsy materials could not survive the millenniums, although the remnants of one such diluvial 'house' were discovered by Forrer near Spichern in the Alsace.

The windbreak consists of a simple structure of trees or branches stuck into the soil to form a straight wall or semicircular enclosure. The framework is covered with brush, leaves, bark, or grass to

well known, but, as Stefansson reports, "a new camp is warmer than an old one, for a new snow house is a snow house, but an old one is an ice house." Although the building of an igloo takes more time than a tropical dome-shaped hut, it is nevertheless only a temporary home of hunters, which must be abandoned in the spring when the snow on the roof begins to thaw and when puddles of water on the floor make "the interior of every Eskimo house like a lake all summer." The same dwelling may be reoccupied during the autumn when the snow begins to freeze, but this is done only when its former occupants happen to return to the same region.

The Eskimo as well as many other primitive tribes have often been induced by the white man's greed to work in mines and receive, as a reward, the dubious benefits of the civilizers' housing facilities in the form of wooden or tin-plate hovels. The results at Wainwright Inlet, for instance, have been so damaging to the natives' health that the white man himself has had to persuade them to return to the old igloo. Similar experiments have been made in many other regions under civilized influence — in



QUADRANGULAR HOUSE

Kwakiutl Indians

After H. W. Krieger

South Africa, for one—and the result has always been detrimental.

We saw that the windbreak, man's oldest hand-built shelter, foreshadows even in its crudest beginnings the shape of the two principal house types: the dome-shaped beehive and the quadrangular house. But also the tent, another easily movable shelter, has its origin in the windbreak. The different types of tents used by primitive man and by his later imitators of the civilized world are characteristic of nomadic peoples. Their livelihood being derived from hunting or herding, they must be able to dismantle their houses quickly.

The tent of the arctic, subarctic, and related tribes is a conical structure of wooden poles arranged in a circular pattern and covered, according to climate and season, with bark or animal skins. Well known to most of us since boyhood days is the tipi or teepee of the Plains Indians which is of characteristic shape and of especially fine workmanship. What story of 'Wild West' adventure would be complete without mention of the teepee?

Although its general appearance is well known, its method of construction is not equally familiar, so it may be worth while to quote the description by Waterman :

In setting up the tipi, two poles were put together in the form of a V and lashed at their intersections with the end of a rope, the rest of which was left dangling. A third pole was then fastened to the apex of the V, and the three were raised into the air to form a tripod. This was the foundation of the tent. Additional poles were carefully laid in place, the women—for this was women's work—tossing a turn or hitch of the rope over each new pole and binding the whole firmly together. The cover was next hoisted into place and stretched around the framework, being pegged down to the ground all round. The cover was so shaped that at the top of the tent there was an opening left for the escape of the smoke, and flanking the smoke hole were two flaps known as "ears." The distribution of this type of dwelling was dependent upon the distribution of the buffalo. A whole tribe would sometimes hang on the flanks of a buffalo herd, moving as the herd moved.

Each detail is given the greatest of care, and although the main characteristic of the Indian tent is its mobility, the precision of all its parts in assembly never suffers. The layman occasionally confuses the teepee with the wigwam of the Algonquian-speaking peoples of the Atlantic side of the North American continent. The wigwam is no tent, the word merely meaning 'dwelling.' It is a conical lodge with an arched-over roof of the type which the Sac, the Fox, and other Indian tribes still occupy to-day.



TEEPEE
Plains Indians

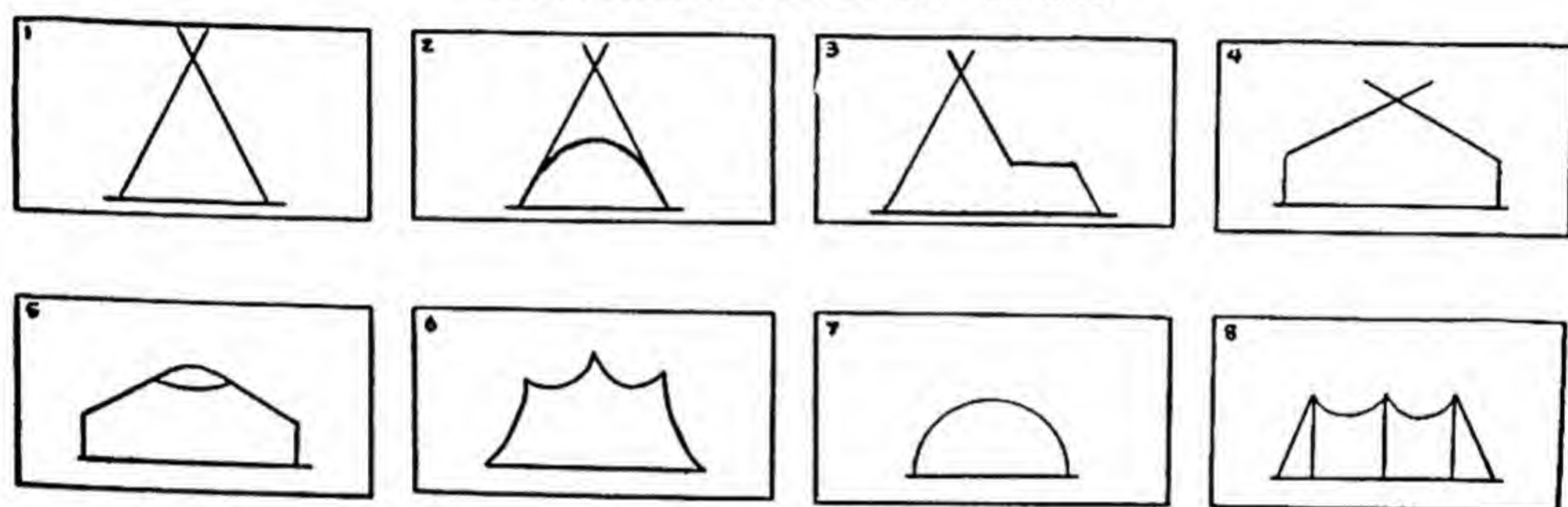
The tents of the Indians of the interior of Labrador, like the Naskapi, are not quite as elaborate as the Plains Indians' teepees. Their ground plan, however, is the same. In the wilderness of the present-day hunting grounds of these tribes

which have remained unchanged through the centuries many an old hunter still covers his tent with caribou skins in the winter and with birch bark in the summer, stitching the pieces together with a bone needle and carefully tailoring them to fit the pole

structure. But in the Hudson's Bay Company posts modern Indians obtain in exchange for their precious furs the white man's heavy duck cloth to cover tents, whose main structure follows that of the olden times with only the addition of a horizontal roof-tree. Such a tent lacks the beauty of the older models whose naturally blended aspect is achieved by skin and bark, but when it is snowed on there is nothing to indicate its machine-made shoddiness.

The tents of the Lapps, the only arctic tribe of Europe, are very similar to the North American varieties. During the summer

PRINCIPAL TYPES OF TENTS



1. Northern Asia
North America
2. Lapps
3. Eskimo
4. Palæo-Asiatic Tribes

5. Asiatic Herdsmen
6. Herdsmen of Tibet and Arabia
7. Lake Chad region, Somaliland
8. Patagonians, Araucanians

After Montandon

these *goattas* are abandoned for more convenient log huts of light construction which, however, maintain many of the structural features of the tent. The Russian Finns and the peoples of the Amur region still put two windbreaks together to form a saddle-shaped roof. The felt- or leather-covered *yourtas* of the Central Asiatic nomads are low and spreading and usually erected over pits in the ground. These dwellings are used by many tribes throughout Central Asia extending to the borders of Tibet. The black tents of the Tibetans, loosely woven from the hairs of the yak, allow a veiled view of the outside, although they are completely waterproof. The tents of the North African desert nomads have a rectangular ground-plan, and are covered with palm leaves or with animal skins. South American nomads of the Patagonian Plateau, the Tehuelche and the Tsoneca, use similarly convenient fur-covered tents.

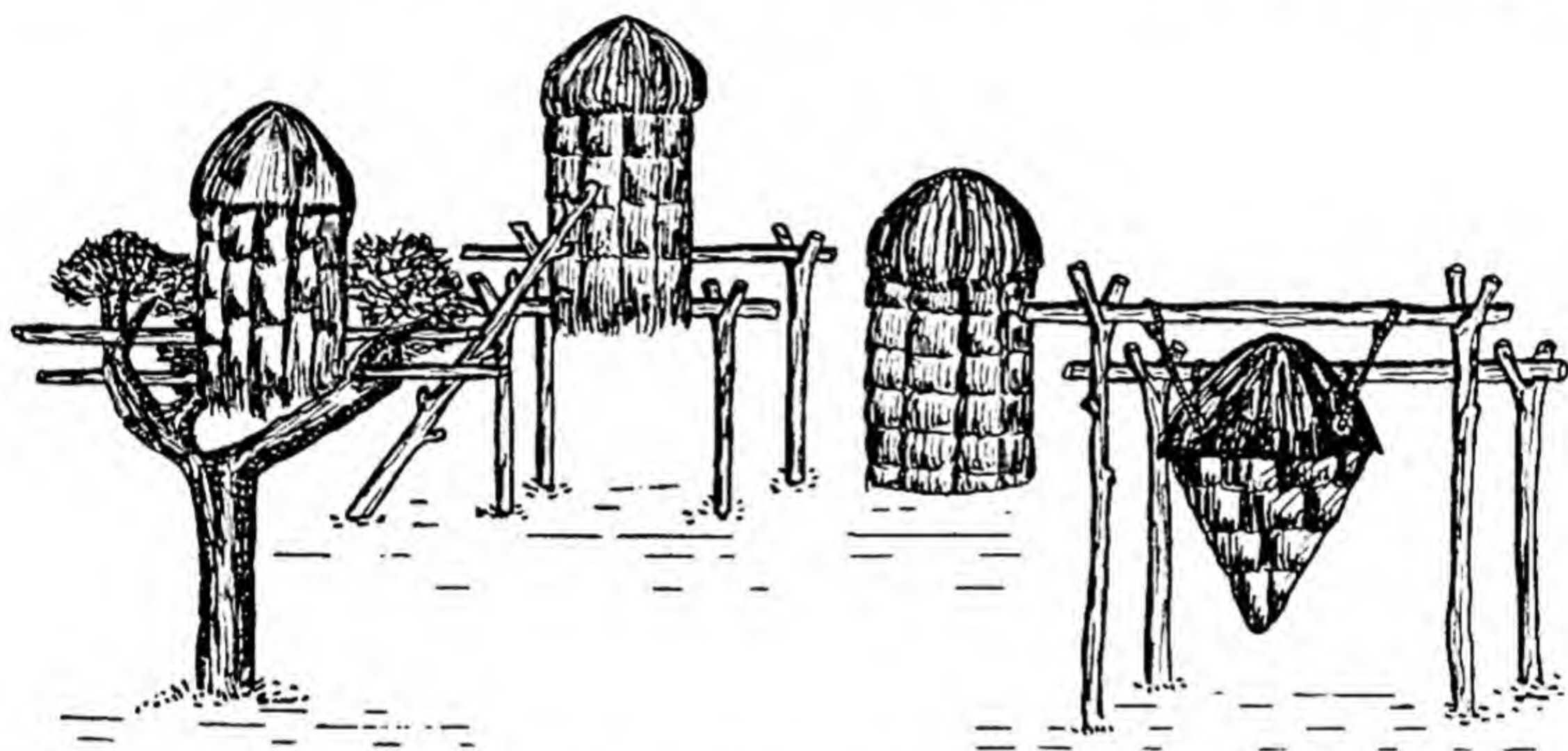
The white man with all his resources has not been able to invent

anything more practical than the tent for hunting expeditions, or for housing mobile troops even in this age of mechanized warfare. Boy Scouts and Girl Guides learn to appreciate nature while camping in the tent, and many of us may have protected our picnic grounds or camp-fires with a quickly erected windbreak without recognizing its venerable past. The skilled arctic hunter, Indian or white, still knows the art of erecting an overnight shelter by arching interwoven brush and trees, which he then covers with thick layers of snow and ice.

early
economy
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All these ancient types of temporary shelters have the common characteristic that they may be rapidly constructed from materials at hand or assembled and dismantled with transportable materials. But what were the first sturdier structures like? What are the forerunners of the house as we know it? It may seem strange, yet it is of significance, that the first more solid constructions were not erected to shelter humans, but to protect and preserve the collected wild-plant products on which their sustenance depended. A large group of tribes, especially of Australia and America, lives partially or exclusively on one or more wild plants whose seeds, roots, bulbs, or tubers provide their food during almost the entire year. Although still ignorant of agricultural cultivation, these harvesters derive their livelihood from the abundance of the wild fields which nature has provided at certain spots on their lands. It may be that wild roots grow there by the thousands, or that wild rice fields or wild acorn groves furnish the available food; in any instance, peoples who gather them are vitally concerned with their preservation. These tribes no longer live from hand to mouth; they guarantee their future economic security by the preservation of wild products. Close to the harvesting fields they erect caches and storage houses solid enough to protect the precious wild harvest, while they themselves continue to live in dwellings of a more or less flimsy construction. The storage houses of, for instance, the acorn harvesters of California are substantial structures with thatched roofs of conical shape.

/ A permanent family home for early peoples is a luxury to be afforded only by those who settled on the land as agriculturists. Only they could develop comfortable living-quarters in our sense of the term. From the simple square or quadrangular house there was successively devised a great variety of dwellings, especially thatched, solid huts with gabled roofs and of larger dimensions than the older types of habitation. This kind of abode, the first 'firm' house, appeared in Neolithic times during the so-called Campignian period. In living cultures it is the home of those

simpler farming societies that are forced into a settled way of life by the necessity of waiting for the ripening of the crops they plant. In regions of mixed cultural influences the houses of agriculturists may assume many variegated forms, with oval or square ground plans, the latter occasionally with pyramidal roofs ; or they may be erected on trees or piles. For the first time there appears a strong emphasis on efforts to beautify the inner and outer appearance of the home. A greater variety of materials is used to insure the solidity of the structure. A few branches or wooden piles are no longer



STORAGE HOUSES FOR ACORNS

Miwok Indians, California

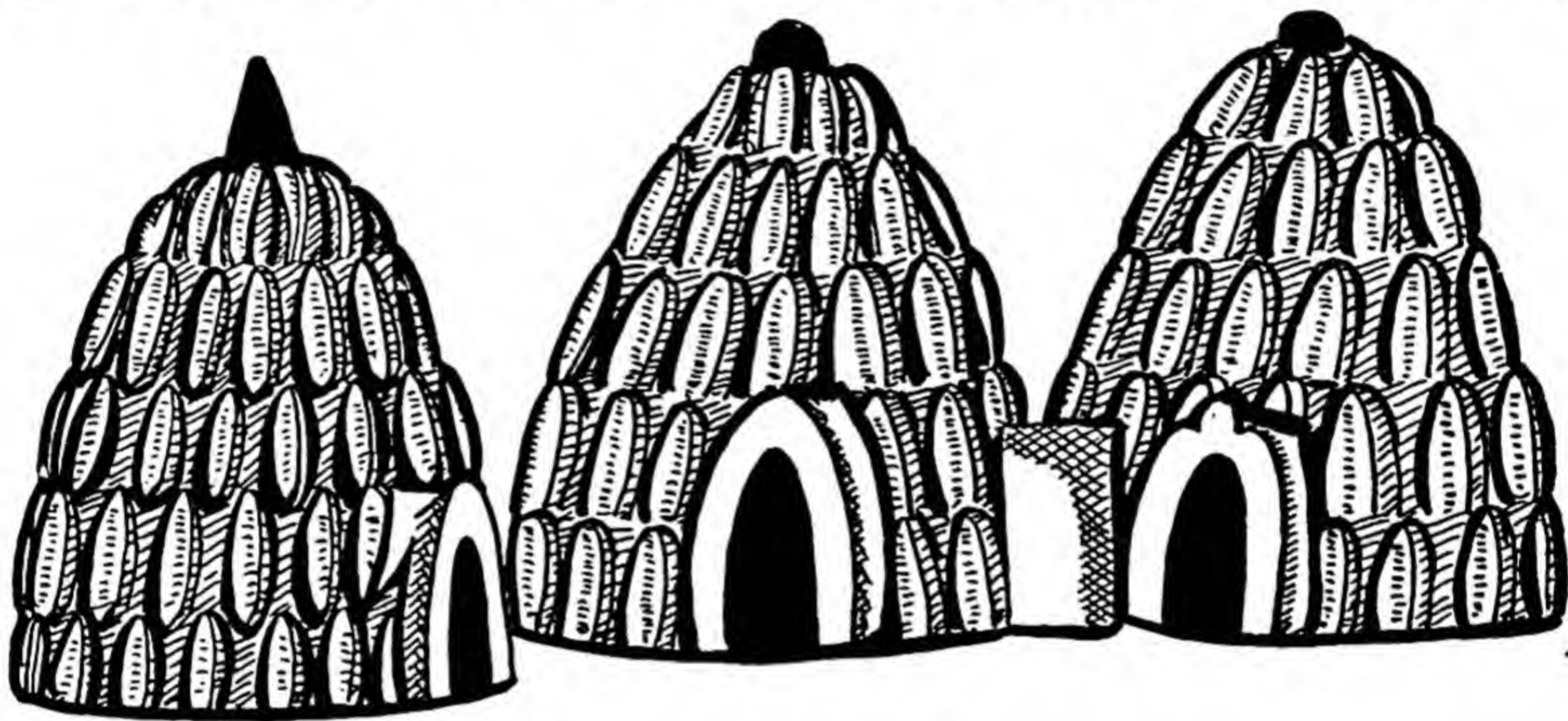
After Schmidt-Koppers

considered sufficient to build a house ; soil or clay or manure is skilfully blended with straw and grass and other binding materials to produce walls that are able to withstand the change of the seasons. The house, no longer a temporary shelter providing occasional protection, begins to be filled with a greater wealth of belongings, and the increasing sedentariness of the dweller and owner creates the opportunity for community life. For the first time, larger groups of people dwell together permanently. Common interests and a generally more sociable attitude create the need for a public meeting place. This leads to the construction of community houses where the men hold conferences and where musicians and story-tellers entertain the entire tribe.

A West African Pangwe man who marries immediately goes to work to build two houses : one as the main domain for his wife and children ; the other, a larger one, as an assembly house

where he passes most of his time except for meals and night-time spent with his family. As the family grows the settlement grows with it, and is often so neat in appearance that Tessmann compares the individual homes with "doll houses, fresh from the box."

Especially in Africa, the covering of the basic wooden structures with clay and similar materials has produced shapes of picturesque attractiveness. Among the master-builders of such homes are the Musgu of northern Merun. In the Niger region houses with a square ground-plan and a flat roof are preferred; these have been



CLAY HOUSES

Musgu, Cameroons, West Africa

After G. Buschan

adopted almost without any change by the high-culture peoples of Anatolia, Persia, and the central and north-western provinces of India. Even sun-dried bricks were used at an early date, although these primitive agriculturists who know the art of baked earthenware have not yet acquired the knowledge of the baked bricks. Clay as a building material also plays an important rôle in the house-building of many Central and North American Indians, among them the Navaho and the Pueblo.

Human imagination applied to factors of climate and geography provides almost boundless variety to the homes of the agriculturists. Settlement near a lake shore or in swampy land has resulted in the construction of houses on piles. Pile houses, however, are also built in dry regions, but in such cases this construction is used for protection against hostile invaders. The pile houses of New Guinea, elevated four to ten feet or higher, are constructed in harmonious and spacious patterns.

Economics →

Pile structures have been known to man since the dawn of time, as the remnants of the habitations of the prehistoric Lake Dwellers prove. They were built in Europe at a time when caves were still occasionally used for temporary quarters. Most famed among these ancient settlements are the homes of the Lake Dwellers who lived in a region comprising parts of modern Switzerland, Germany, and Italy during the Neolithic period. These homes even had their watch-dogs, the *Canis familiaris palustris* breed. The solid wooden



TUKUL (DWELLING)
Upper Nile
After Bernatzik



THATCHED HOUSE
Batak, Sumatra
After Gendreau

floors show inlaid ornamentations of birch bark ; remains of bast mats have been found ; and many luxuries, preserved through the millenniums by favourable circumstances, testify to a high standard of living. Outside Europe the prehistoric builders constructed pile houses in Eastern Asia and in Indo-China. These houses were arranged in groups, usually in rows, just as they are to-day in the villages of the South Seas. In Borneo occasionally the whole village community dwells in a single house, which may extend for a length of more than one hundred yards. Similar 'great-houses' belonging to prehistoric times have been excavated in Europe, especially in the Ukraine. Long communal houses are the customary living-quarters of many tribes in Indonesia and in South America, where they usually house an entire sib of as many as one

hundred people. Or an entire village community may dwell in two or three such houses arranged round a central square. A Papuan house of New Guinea was two hundred feet long and forty feet wide. It was equipped "with a central hall, which runs the entire length of the house and is reserved for the use of men; on either side are the walled-off rooms. These consist of three storeys. In the lowest of all the cooking is done, the middle one is for the women and children, and the top storey for the men."



HOUSE-FRONT PAINT-
ING OF A BEAR
Tsimshian Indians
North Pacific Coast
After Boas

Indian tribes of Alaska and British Columbia lived in houses "large enough to shelter two or three generations and two or more social classes. The house floor was arranged in concentric platforms, each succeeding platform two or three feet above the one beneath. Long and thick retaining slabs of hewn cedar formed the retaining walls of each platform." Such homes of the Tlingit had picturesque names like 'the-spot-that-looks-good,' 'place-where-you-can-swim-through,' 'bear-man house,' etc., recalling the houses of mediæval France whose names were derived from their painted posters like 'House of the Grinning Jester,' 'House of the Jumping Fish,' and Balzac's immortal 'House of the Ball-playing Cat.'

The cliff dwellings of the Pueblo constitute another variety of the primitive house—some of them resemble nothing so much as the sky-scrapers that tower above New York and are considered marvels of modern ingenuity. African counterparts of the Pueblo dwellings are the rock houses at Medinine in Tunisia which have carved-out rooms side by side.

The structure of the Pueblo *mesas* and similar ancient structures like the Crimean cliff dwellings, the cone dwellings of Cappadocia, and the cavate lodges in Arizona, clearly indicate that a decisive motive of the villagers was defence against intruders or enemies. Where nature's rock formations have not fortified a place, man has done his best to build earthworks or similar protective devices. African villages are often surrounded by mighty walls or palisades, and most elaborate measures were taken for protection, especially during the times of the great slave hunts. In the old Sudan cultures houses were often completely subterranean. To-day most homes in the Niger region are sunk in the soil. The Banda of French Equatorial Africa build their houses in strategic locations,

to facilitate a close watch over the surrounding terrain. These houses are equipped with entrances so low that the visitor has to crawl on hands and knees into the 'parlour.' In the eastern Mbamland of the Cameroons the remnants of the gigantic fortifications erected by the Fullah, the Wute, and the Tikar speak a vivid language of the past. Their palisades had massive gates and



HOPI CLIFF DWELLING

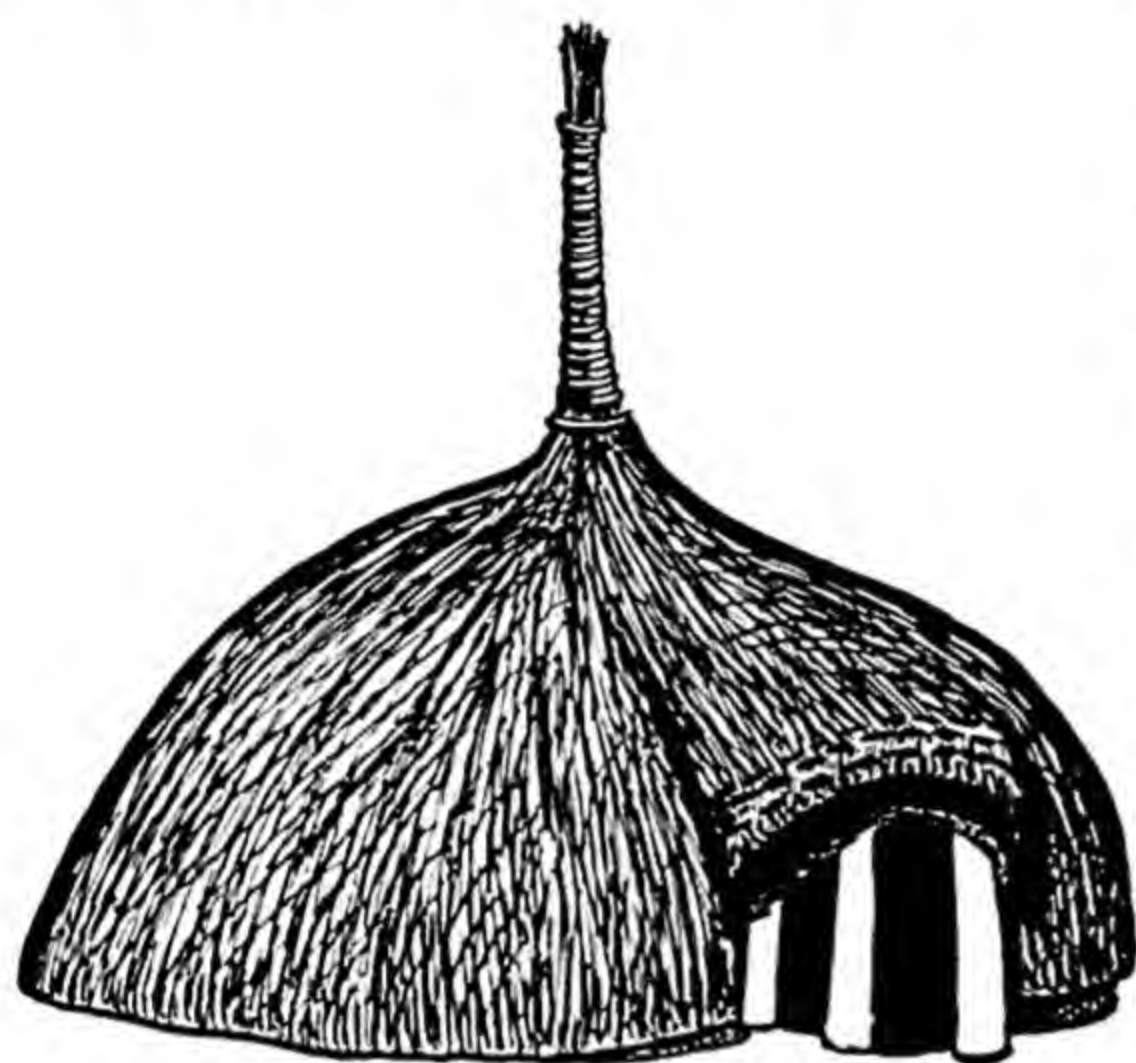
The ancient town of Walpi

American Museum of Natural History, New York

strong clay walls up to twenty feet high, with embrasures through which the defenders hurled arrows and spears upon attackers.

The tree houses of New Guinea can be reached only with the aid of rope-ladders which are pulled up during the night. Where doors or their primitive equivalents are known, mechanisms have been devised which make opening them a job for 'insiders only.' 'Latch-keys' made of wood may assume such tremendous dimensions that no husband could possibly succeed in concealing one in his pocket when he goes out at night.

If we judge the homes of primitive man from an æsthetic angle the peoples of Polynesia may well carry off the prize. The Maori of New Zealand, for instance, transform their square houses into impressive monuments of art. The canoe-shaped roofs, thatched with reed, grass, or palm leaves, are supported by carved pillars of exquisite beauty. A great variety of forms shows the high cultural level achieved by these islanders. From the simple, mat-covered huts of the common people to the artistically fashioned



BANDA DWELLING
French Equatorial Africa
After Daigre

homes of the wealthy, a wide range of ornamental styles and construction is represented; and the *whara*, or community house, is a treasure of artistic workmanship and taste. Hawaii, Samoa, Niuafoo are names which stand for the finest architectural and artistic achievements reached by primitive man; and the colossal stone statues of Easter Island and the prehistoric basalt ruins of Ponape—still shrouded in mystery—are remnants of by-gone grandeur. The pyramid-shaped 'stages' or storage houses of the Maori, on which food was piled in gigantic quantities for the convenience of the guests

attending the *hakari* festivals, reached heights up to ninety feet, with bases thirty feet square supporting sides that tapered toward an apex.

When the time had arrived that man began to record his own history the old high cultures were taking shape. Large groups of residents concentrated in communities which no longer had the appearance of mere villages. New and stronger tools permitted the use of the hewn stone for human dwellings and public buildings; the palaces of the rich began to mark the differentiations of castes and classes—the city was born. Wealth and power manifested themselves in monuments of towering height, built as demonstrations of might for ages to come.

The houses of the Aztecs of ancient Mexico varied from the branch-covered huts of the hot regions to the brick houses of the highlands, culminating in majestic temples and palaces. The houses of worship built by the Maya of Guatemala were even mightier.

The buildings of these ancient peoples, erected for 'eternity,' have never been surpassed. Even to-day the pyramids of the Egyptians still rank among the seven wonders of the world; and we have not yet learnt to duplicate their art of cutting stones with such precision that they can be joined without mortar for everlasting durability. The temples of India and China and the ruins of Ur are evidences of such skill and wealth that our civilization of mechanized haste can but humbly admire them. We have been equally unable to mix mortar of the quality used in the Roman viaducts, palaces, and monuments. Our present-day trowel is of the same shape as the Roman, because it is the perfect shape.

From windbreak to pent-house, from tree hut to fortress—the development of the buildings erected by the hand of man reads like a saga of might and intelligence. Yet even the most modern house in order to be habitable still depends on an elementary force which was given to earliest man by the gods. This eternal gift is fire.

No home, no tribe, no human life, would have been possible without the blessings of fire, that mysterious brother to the sun. Its importance is so paramount in the human mind that there is no people on earth who does not have tales and sagas to explain its origin. It is considered so precious a treasure that many myths relate that man had to pilfer it from gods who were unwilling to share it with the mortals. According to the Greeks, Prometheus stole it from Zeus and suffered horrible punishment in consequence. To some primitive Australians, the thief was the wren, a tiny bird,



CARVED HOUSE POST
Maori, New Zealand
Museum of Ethnology, Cologne

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who brought the divine spark from heaven under its tail. Other Australian tribes believe that the fire was stolen from two superhumans who tried to withhold it from man; or that a raven snatched it from the top of the digging stick of Karakaruk, one of the virgins later transported to the skies where she stands now in a cluster of stars known to the white man as the Pleiades.

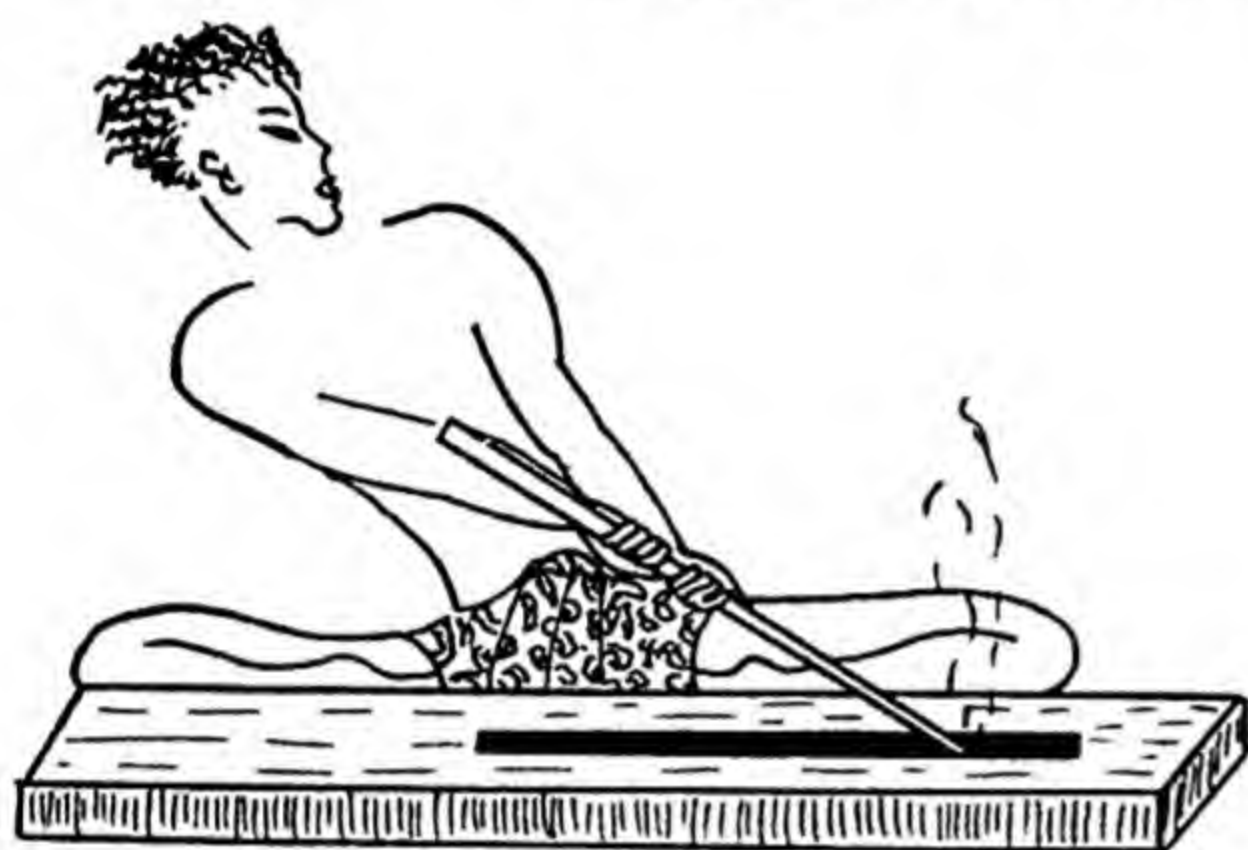
To many peoples with written and with unwritten histories fire is holy. In India the god of fire, Agni, is the messenger between man and his gods who carries the sacrificed souls from the alter of fire up to the immortals. The Parsee Zoroastrians worship the creator of the world by the symbol of fire, "because it is the most perfect symbol of the Deity, on account of its purity, brightness, activity, subtilty, fecundity, and incorruptibility." The Germanic tribes honoured the element in their solstitial fires. In our own Bible God appeared to Moses in a burning bush, and the Holy Ghost materialized in the form of a flame. Needless to say, the flowering imagination of primitive man has glorified the great phenomenon of fire by countless myths, many of them of stirring beauty and all revealing a sense of veneration. Maui, the Polynesian god-hero of the Maori who lifted their island from the sea, is also the bringer of the fire. The African Herero combine ancestor-worship with their worship of the holy fire which burns in the homestead of the *oruzo* or priest and is kept alive with sticks of the sacred Omumborombonga tree (*Lombretum primigenum*), the dwelling-place of the ancestral souls. The girl who tends this holy fire must remain unmarried like the Roman Vestal Virgins. The life of this fire is identified with the life of the tribe. If a foreign chieftain gets hold of it he becomes the master and protector of the Herero, as happened in 1850 when many Herero 'took the fire' of the Maherero and thereby became members of the latter tribe.

In the hearth of each Buryat tent lives *gali ezen*, the fire spirit, who is "of human shape and only small in size while in the hearth." No rubbish, dirt, or other refuse may be thrown into the fire—this would insult his feelings. No knife or pointed tool must be used to stir the fire; it might blind *gali ezen* and render him unable to chase the evil spirits away from the hut. He receives sacrifices prior to all other gods. The fire is the property, nay, a part of the sib itself. No foreigner is allowed to take fire from the hearth, and if a visitor has lit his pipe while in a Buryat home he must empty it before he leaves.

Numerous are the devices to kindle the precious element; early ingenuity invented many methods to bring forth the revered spark.

The Australians produce it by drilling, twirling, or rubbing a wooden stick on a wooden base or by 'sawing' a soft log with a boomerang of hard wood. When the chipped-off wooden particles begin to smoulder they are caught with tinder and fed with dry grass until a flame is produced. The fire-borer is a round stick which is twirled round within depressions made in another stick. The twirling continues until smoke appears in the sawdust, and the

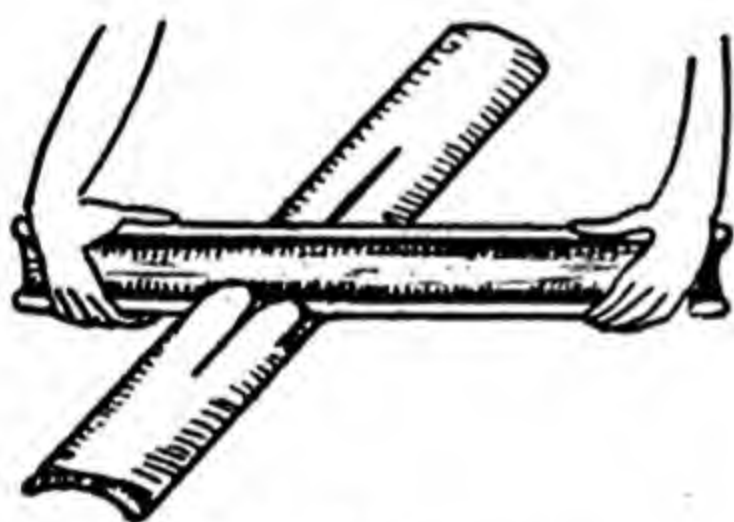
METHODS OF KINDLING THE FIRE



Fire-plough



Twirling Fire



Fire-saw

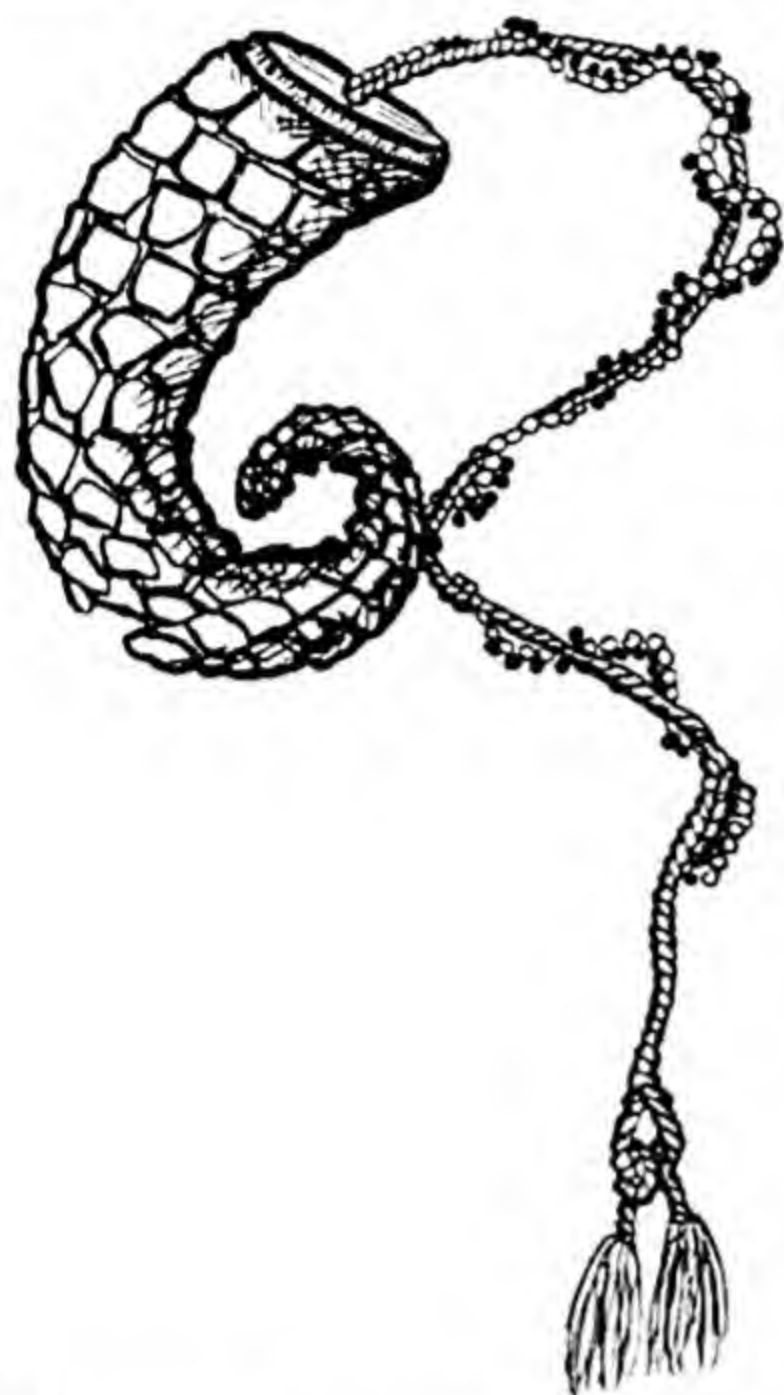


Drilling Fire with Bow-drill

tinder, after being gently blown on, breaks into a flame. Two bamboo splints serve as another type of fire-saw. One has a groove surrounded by tinder, the other is moved back and forth along the groove in a saw-like motion. The Polynesian fire-grater is another variety, consisting of a piece of pointed hardwood with which a softer log is rubbed until the sawdust begins to smoulder.

The distribution of the drilling method is world-wide—from the African Bushmen to the North and South American Indians. Ingenious variations are the cord drill, the bow drill, and the 'pump' drill of the North American Indians, with strings and spindles serving to mechanize the arduous labour of drilling.

The so-called fire-plough method, which is the rubbing of a lengthwise-notched stick with another stick, is customary among the peoples of Borneo, Polynesia, and Micronesia, and is also



TINDER BOX, FASHIONED
FROM ARMADILLO TAIL
Tapiete and Toba Indians
After Nordenskiöld

referred to in the creation myth of the Phœnicians. Other variations of the fire-saw are used by the Malays and by the natives of New Guinea. Even primitive 'lighters' are known, involving the still unchanged operation of creating sparks by striking stone or metal against stone. This practice is customary with the Eskimo because scarcity of dry wood in icebound regions necessitates the use of other materials, and among many South American tribes. More ingenious is the fire-pump of India and Borneo. It consists of a wooden cylinder in which a piece of tinder is compressed with a closely fitting piston which is stroked up and down until sparks are produced.

Such primitive methods of producing fire have survived the ages, as our modern Boy Scouts know. Like to-day's primitive peoples, prehistoric man depended upon them. In the ice-age graves of northern Europe pyrites and flint have been found side by side. The Romans discovered the fire-creating qualities of sulphur, and used it in combination with their fire-stones. It was not until about 1650 that chemical lighters, operating on a combination of phosphorus and sulphur, made their first appearance. Almost two hundred years later, around 1820, the first 'phosphoric bottles,' complete with sulphur-treated matches, were sold in London; S. Jones's 'Lucifer matches' and later improvements quickly followed.

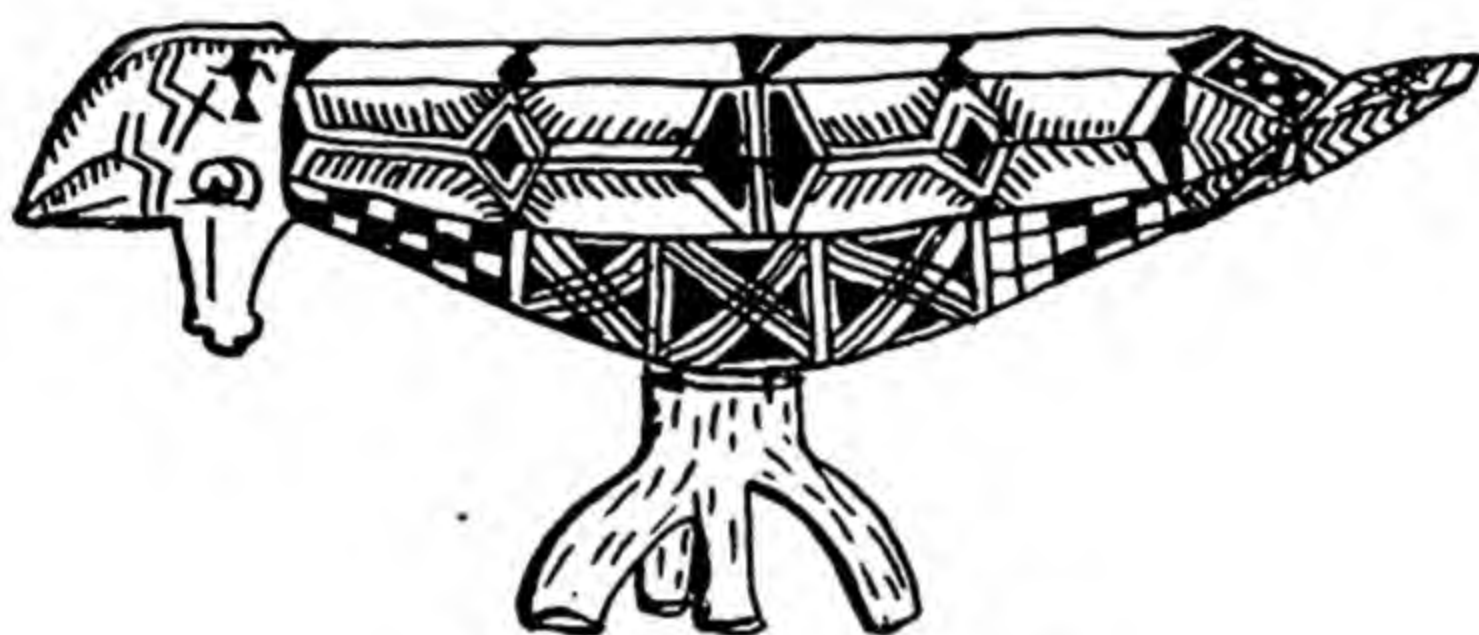
Next to the sheltering roof, the fire has been since the dawn of time the main element in the conception of 'home.' It gave the human touch to the mere shelter or abode; it is the mark of *homo sapiens*, however primitive his belongings, because no animal has ever been able to control or maintain this blessed gift. When nostalgia besets



HEAD-REST OF WOOD
Geelvink Bay, New Guinea
After Wood

us far from home it is the fireplace that we most frequently recall as the symbol of its pleasantest associations.

To primitive man fire may mean the difference between life and death. It is no wonder that he tries to keep fire alive under all circumstances, to have it always available. If it threatens to die out blow-pipes and fire-fans rekindle it in Indian homes; bellows are used in Africa. Even on trips and excursions fire is carried along. The Eastern Bolivian Noeze carry packages of smouldering particles of the *motacu* flower carefully wrapped in moist *pataju* leaves. Many South American tribes maintain regular 'filling stations' containing stores of smouldering tinder



WOODEN HEAD-REST
Santa Cruz Islands
After Wood

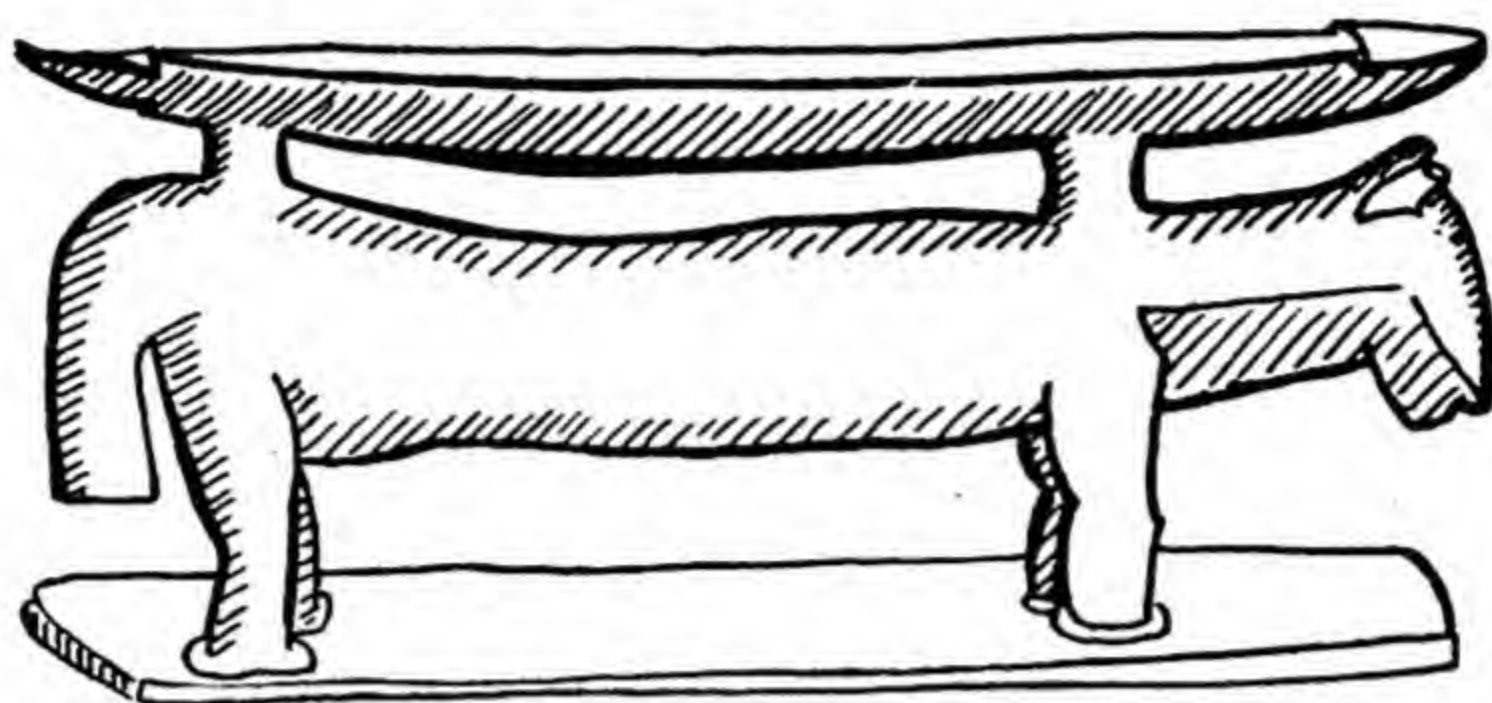
under ashes in specially erected rain-protected huts at the cross-roads of jungle paths, so that the passers-by can readily obtain the precious element, which they cannot easily kindle in the humid primeval forest. When Albert Schweitzer told some West African natives about European forest fires they laughed. The woods are wet like sponges—how can they burn?

The fire in the middle of the tent, in the hut, or in the house is the centre of all home life, the source of warmth, the creator of palatable food, the inspiring flame which brings olden tales to life and draws the family circle closer. At night it is the keeper of warmth and the friendly protector against tropical insects.

The roof and the fire are the two fundamental elements in the notion 'home,' but no man has been content throughout time to satisfy only his most fundamental needs. For comfort and for an expression of his individual desires he has devised furnishings for the home.

A child of nature sleeps in a way most comfortably suited to the prevailing climate. The earliest bed of man was the simple

floor-covering of fresh twigs and branches. Coverings of animal skins are used in Tierra del Fuego and in many North American regions ; the warmer climates of Australia and South Africa allow much scantier coverings or permit people to dispense with them

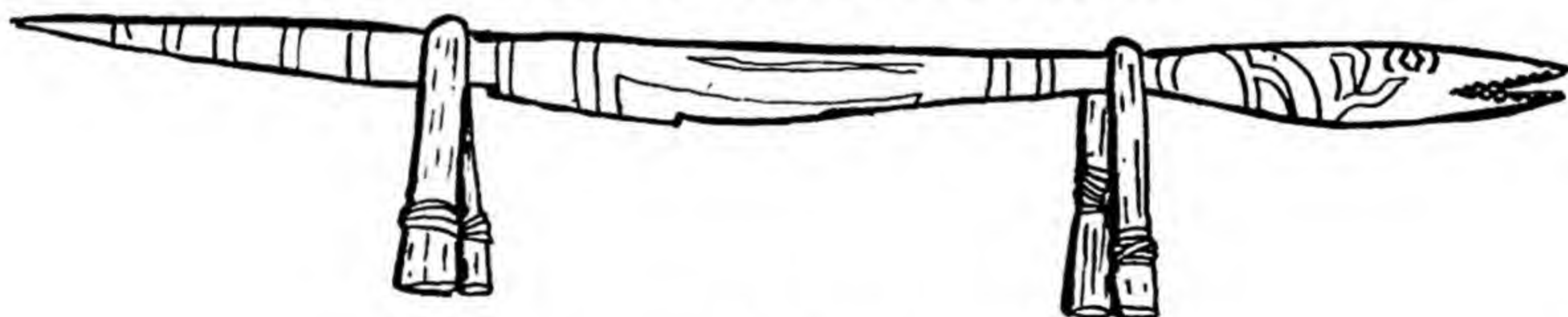


HEAD-REST

Kafirs, South Africa

After Wood

altogether. Sleeping naked in wood ashes is preferred by many African tribes as a healthy practice which protects the body from cold and insects. Most Pacific and Southern Asiatic tribes sleep on neatly woven mats. In Polynesia the number and age of the mats in a household determine the wealth of its owner.



HEAD-REST

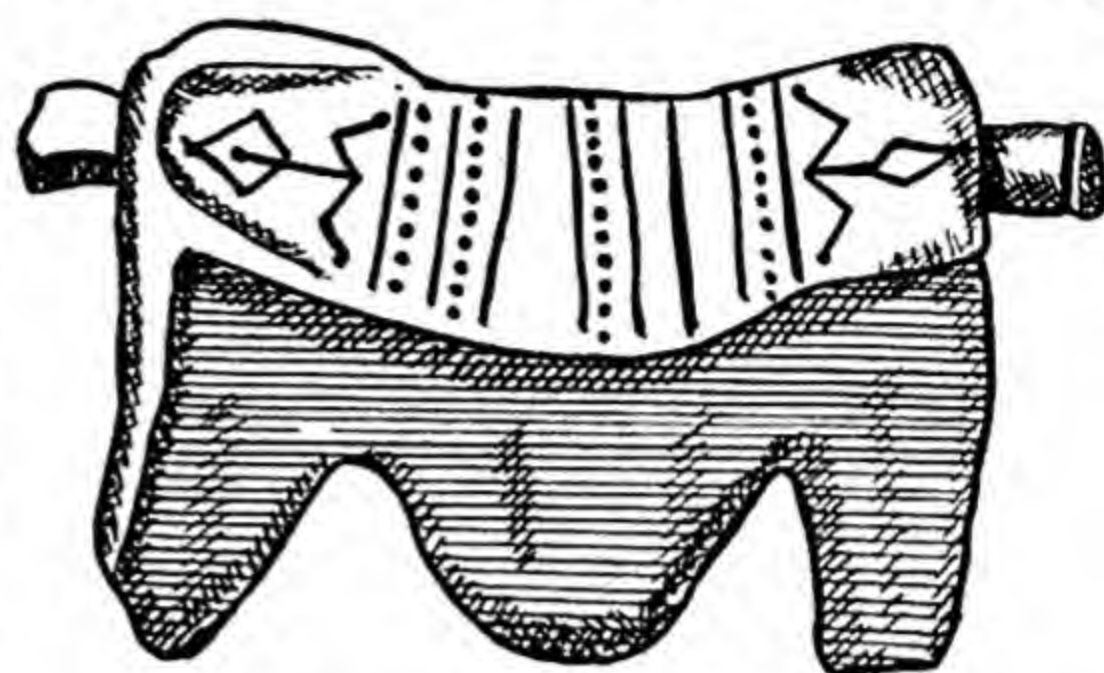
Mamberamo, New Guinea

After Wood

The first 'pillow' is a head-rest which may assume any imaginable shape from a crude log to the artistically carved square bench that supports and protects the complicated native coiffures. In Africa and South America it has developed into a richly carved little stool, a handsome piece of 'interior decoration.'

A regular bed in our sense combines the conception of a resting place with elevations above the floor-level. Such forerunners of the modern bed are the sleeping benches of clay or soil along the inner walls of houses common in West Africa and the Sudan,

as well as among the Indians of the American north-west coast. Platform-shaped beds of wood, occasionally covered with very comfortable plaited 'mattresses,' are used by many primitive South American jungle households, and are also common in Africa. They are a very ancient invention, regarded as even older than another famed primitive sleeping device, the hammock, which seamen still recognize as thoroughly practical and comfortable. Hammocks were developed in New Guinea and especially among the South American tribes of the tropical East. Woven of plant fibres, they criss-cross the living-room of the huts "like the liana twists" outdoors in the



BENCH OF CEDARWOOD

Supposed to represent figure of
Jaguar

Guarani Indians, East Paraguay

After P. F. Müller



AFRICAN CHIEFTAIN'S STOOL

• Cameroons

Wood carving, decorated with cowrie shells and glass beads

Museum of Ethnology, Cologne

woods. As a protection against insects, many kinds of primitive mosquito-nets have been invented. Among the Guató Indians

nets have the shape of a wide sack woven of tucum-leaf fibres, and are suspended so that the opening is over the sleeper's face. The Nor-Papua of New Guinea fashion whole sleeping-bags of long *kirán* grass. These bags are highly desired trade objects among the islanders.

The average primitive household does not include tables and chairs as necessary items of furniture. The family members prefer to sit on mats or animal skins or on the bare soil, occasionally on rocks and logs. Simple stools and benches are found among the aborigines of South America and Africa. The possession of a chair is certainly not regarded as an addition to comfort. When the idea of dignity and the desire to feel superior, even physically,



WOODEN BOWL
Santa Cruz Islands
Museum of Ethnology,
Cologne

possess the mind, the chair becomes a medium of elevation; the higher rank of a person is visibly expressed by enthroning him on a magician's or chieftain's stool. This is especially customary in the Dark Continent, where chieftains' stools, painstakingly carved, are among the finest manifestations of African sculptural art. Precious cowrie shells

and glass beads are often used to decorate thrones, some of them completely covered with thousands of blue and white glass beads under which the magnificent carvings are completely concealed.

But even without heavy furniture, the primitive home impresses the visitor by its general air of comfort and by the presence of essential things which contribute to the happiness of family life within the general framework of its cultural level. And utility is not the only consideration; sense of colour and form and good taste characterize the furnishings of even the simplest home, from the ochre-painted wooden containers and handsomely ornamented string bags of the Australians to the beautiful pottery and artistic spoons and ladles of Africa. The magnificently carved bowls and head-rests of the South Seas are some of the proudest possessions of our museums.

The more settled a tribe, the more time can be spent by its members in beautifying the inner and outer walls of houses with painted or carved ornaments. The totem-poles and house fronts of the Alaskans, the African wooden and clay reliefs, and especially the carved panels of Polynesian homes furnish outstanding examples of such peculiar artistic perfection that modern sculptors have often attempted in vain to imitate the workmanship, subtle colouring, and exotic designs of these ornaments.

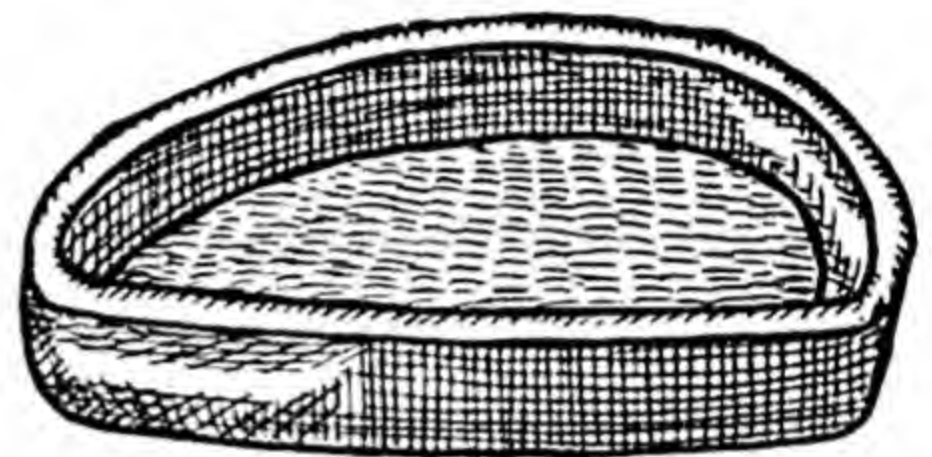
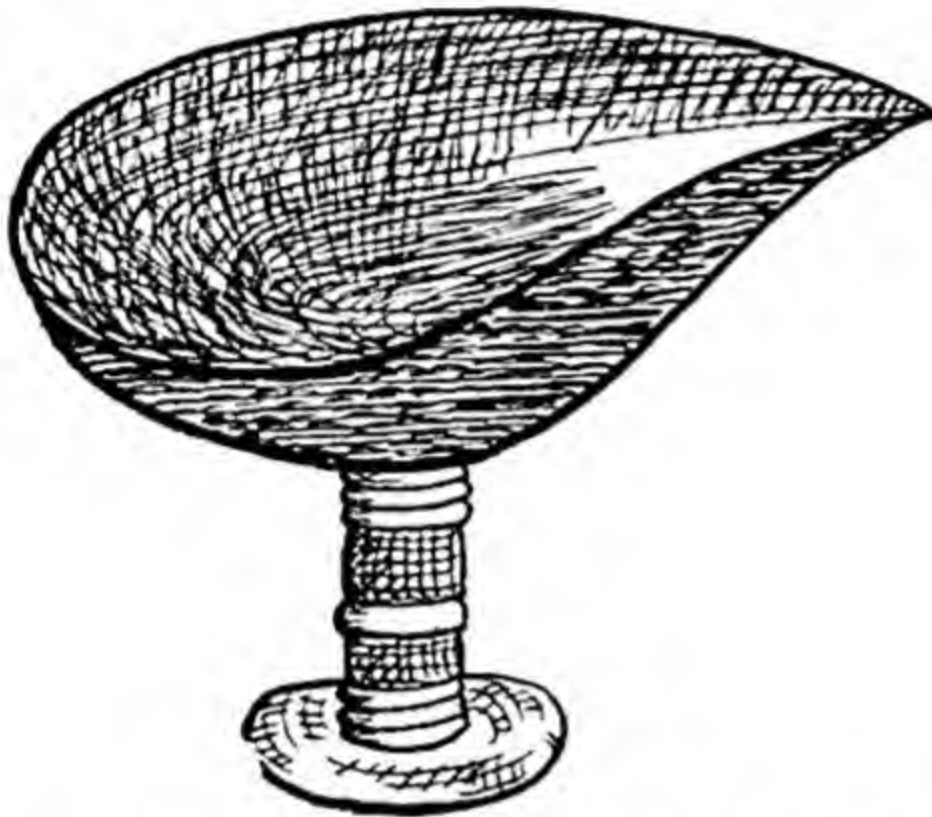
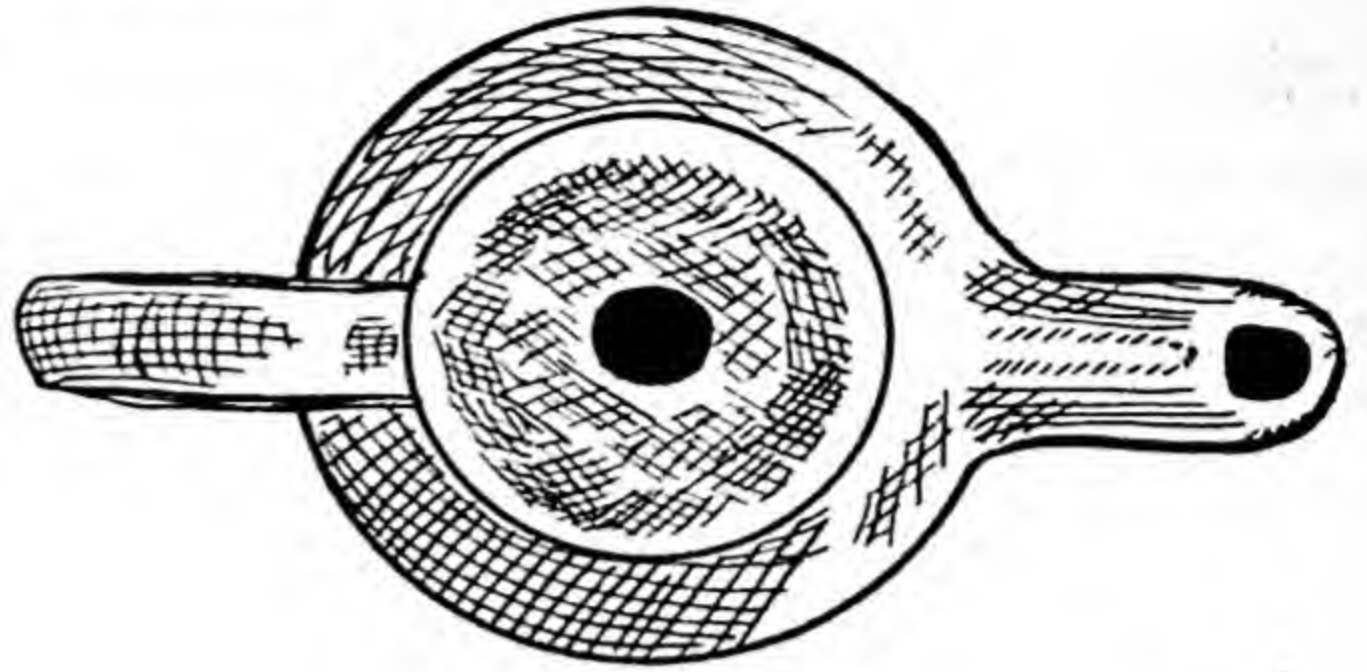
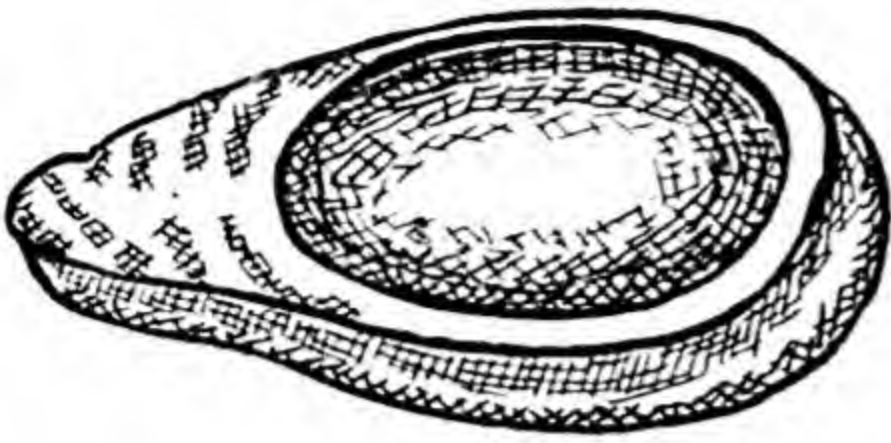
Even the households of prehistoric man were furnished with luxuries, including artistically shaped and ornamented spoons, needles, stone knives, carving tools, drills, spindles, and planes. Neolithic lamps are the prototypes of the oil-lamps of classic Pompeii and Rome. As a purely æsthetic expression, male and female and animal figures were carved or painted on walls during the Aurignacian period; statuettes of ivory graced some rooms. Besides the earliest manifestations of great religious art preserved in the magic animal paintings of the palæolithic caves of Spain and Southern France, we find equally numerous expressions of early applied art in the ornamented containers, tools, combs, and dishes of millenniums ago. Whole cultural stages of the Neolithic period have been named after the ornamental designs found on the pottery of its artisans.

Although not all living tribes have pottery or earthenware in their kitchen corners, because some have not advanced far enough to learn the secrets of their manufacture, all peoples use containers of some kind, whether for gathering, cooking, or storage. The storage of water is most important because it enables a people to move about freely without being bound to a near-by spring or river. But the very primitive have not readily found means of storing water. When, for example, the girls and women of Tierra del Fuego fill their primitive leather bags or bark pails with water, they have to hasten homewards because the containers leak so quickly. The Australians use natural rock pits or hollow stones to store water. The birch-bark containers of the primitive Labrador Indians are much more practical: sewn together and caulked with resin, they are as waterproof as the Labrador canoes which are similarly constructed. While travelling, these Indians use folded water-cups of birch bark held together by wooden pins.

In the Malayan Archipelago hollow sections of cane and bamboo are favourite water-containers. The Indians of Eastern Paraguay store water in pumpkin shells and in the thick sections of the *tacua rusu* bamboo, whose long stems they also use for portable containers by removing the nodes and drilling several drinking-holes into the cane. Parts of the same bamboo serve as very practical kettles which can be used many times before the bottoms become too charred. Coconut or gourd shells are widely used as water-containers also. Another ancient type of water-container is the sewn bag of animal skins found in India and in the Sahara.

Even the most primitive tribes are very resourceful in devising household containers. For example, the Australians make ornamented wooden bowls and finely woven string bags to hold the

OIL LAMPS



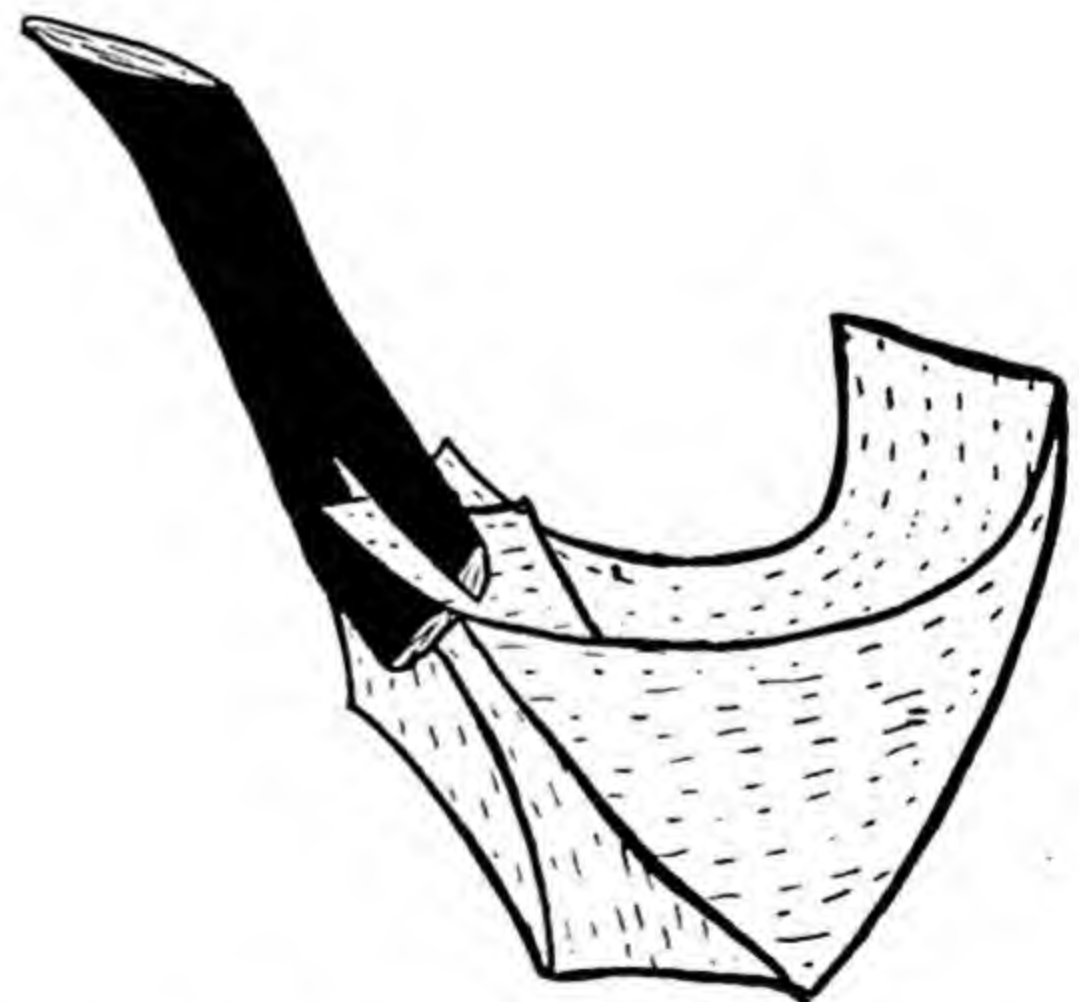
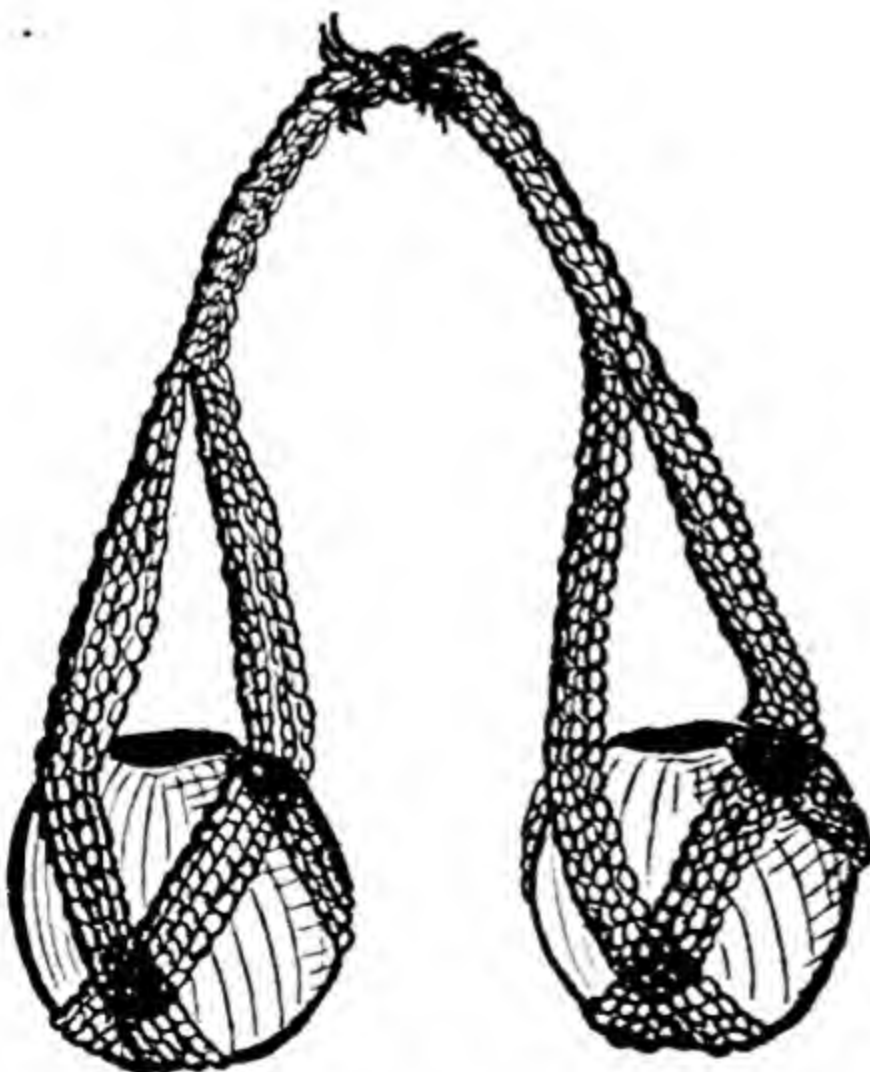
(Above) PREHISTORIC STONE LAMP

- Magdalenian epoch

(Below) AFRICAN LAMP
Uganda

(Above) ROMAN CLAY LAMP

(Below) ESKIMO STONE LAMP
After Haberlandt



WATER-CONTAINER: COCONUTS
ON COCONUT STRINGS

Santa Cruz Islands
Museum of Ethnology, Cologne

DRINKING CUP, FOLDED FROM BIRCH
BARK (TRAVELLING MODEL)

Montagnais-Naskapi Indians
Collection Julius E. Lips

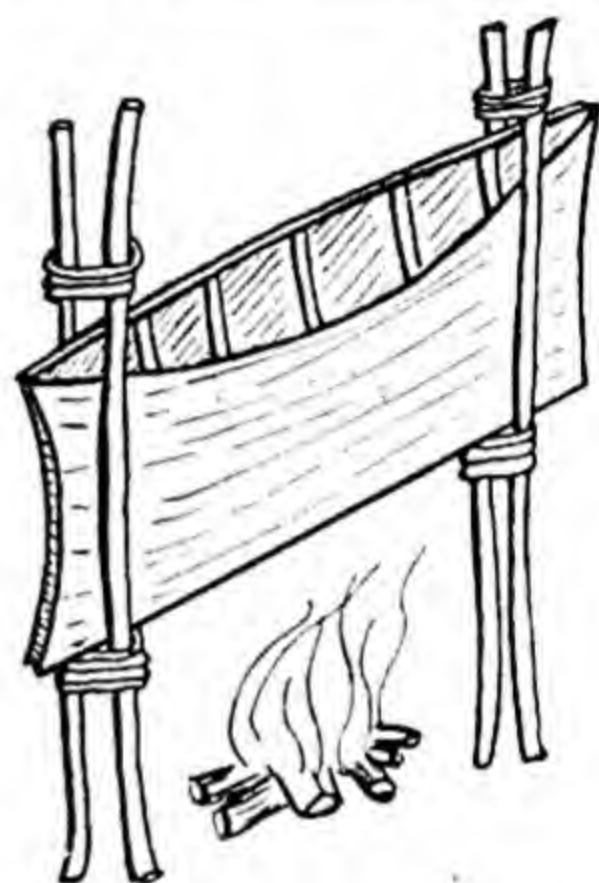
fruits and plants they collect as food. Plates and platters of leaves, shells, or wood can be found wherever a primitive family lives. Ladles, which are older than spoons, are often artfully ornamented and of exquisite shapes.

If we had a magic carpet to carry us safely to the isolated abodes within the hidden corners of the world we should find among primitive households scenes of peaceful comfort.

In the birch-bark or caribou-skin Indian tents which dot the vast hunting-grounds in the interior of Labrador the smoke of the home fire emerges through the smoke hole at the apex of the conical structure. Inside, broth boils in the caribou-belly 'pot,' a beaver-tail roasts on large wooden skewers, and the pemmican mixture of bear grease and preserved blueberries stands ready in a covered container of ornamented birch bark. Round baskets of the same pleasant brown- and white-coloured pattern hold *banok*, the Indian bread. When the wooden spoons are washed and the huskies have retired to beds dug in the snow outside the Naskapi family reclines on the balsam-covered floor near precious bundles of mink and marten, lynx, musk-rat, and silver fox which will be brought down to the Hudson's Bay Company post during the next spring to pay for the following winter's supplies. The fire is carefully tended; the baby cradle of appliquéd leather swings slowly in the dim light of the northern night; hunting-charms dangle from the wall; and the young may dream of the venerable grandfather, the Bear, while their father prays to the Man of the North that he may have mercy and not send a new blizzard to cover the tracks of the game and the trail to the traps.

Farther north, the Eskimos lie down to sleep under a dome of snow. Reindeer, bear, and musk-ox skins neatly cover the snow platform of the beds; the hunting knives have been cleaned; the dogs, still munching on bones, lie down in the entrance passage; the seal-oil glows in the fifty-pound lamp of soap-stone—*Utkusik-saligmiut*—that provides the cooking and the heating warmth, and from which a whole people once took its name.

Peace is in the Indian huts of California. The flaked, smooth-handled stone knife lies in the kitchen corner; finely woven coiled baskets stand ready for the gathering of the wild acorns; alongside



COOKING POT
FROM THE
NICOBAR ISLANDS

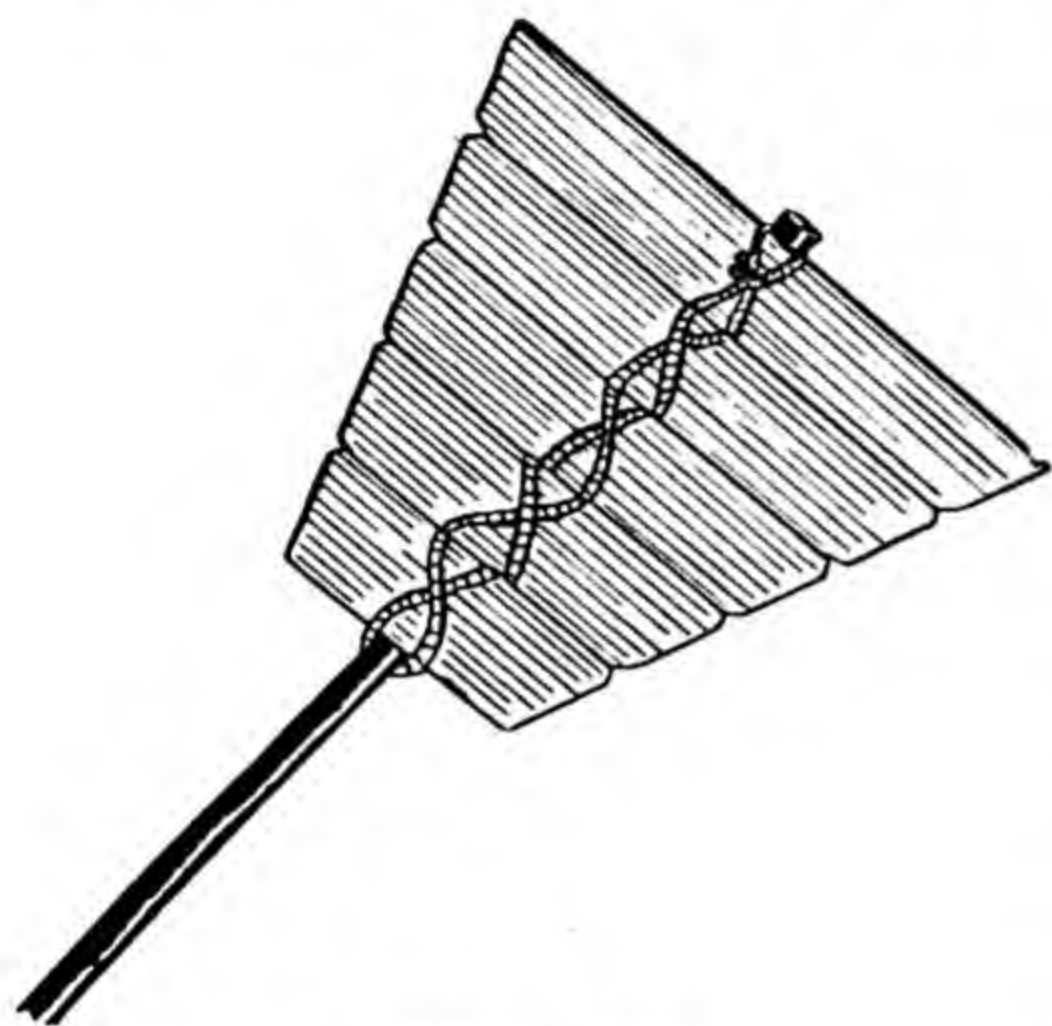
Bark

After K. Weule

them are mortars of cotton-wood and pestles of stone and specimens of the crudely coiled pottery preserved from former generations.

In the so-called 'savage' world housing is no problem; rent-demanding landlords and complaints from lodgers are unknown; kindness and gaiety, contentment and mutual assistance govern life in contrast to the painful uncertainties of 'civilized' living. Wherever we pay our visit among the primitives, we find a like nearness to the gods and a like peace of mind.

The homes of the Pañ' and the Chiripá, which lie in the jungles of Eastern Paraguay, present with their one-room combination of parlour, kitchen, and bedroom an equally appealing appearance. Under the great hammock, made of either red-dyed bromelia, cotton, or cocoa fibres, which is reserved for the master of the house, lies the comfortable palm-leaf mat for his wife. Low stools fashioned in animal shapes stand about. The parrot, an indispensable family pet, chatters from his stand. *Typycha*, the broom, is never missing; the pounded earth floors are clean. A practical shelf hangs from the roof to protect food supplies and kitchen



FIRE FAN

Pangwe, West Africa

After G. Tessmann

tools from ants and dogs. A sharp-bladed knife of *tacua rembo* bark lies ready for the housewife.

Greater wealth is found in the typical home of the agricultural regions of Africa, where iron tools, multiformed covered baskets, colourful woven mats, baked pottery, and scores of additional gadgets make up the variety of material possessions.

The community house of the Pangwe is equipped with benches all along its walls. Day and night the fire throws its light on the drums and on the whetstone dangling from the roof and the great hunting net used for the communal battues. Animal skulls, the hunting trophies, decorate the room. The blacksmith's dug-out workshop with his bellows and fire-fan are often part of the equipment of the community house. In the family home three corners are occupied by the sleeping benches, with the fireplace at the narrow side of the room. Shelves for dishes and clothes-dryers are conveniently arranged; boards for drying and roasting peanuts

Blacksmiths

are kept under a large wooden storage box which may be likened to a pantry. The women's long baskets are hung on the walls, and a three-legged round stool waits for the guest of honour. Grinding slabs with pestles, fibre and wooden plates and bowls, ladles of all shapes—different for men and women—calabashes, and brooms complete the equipment of the well-organized home. When festive occasions lure the dancers to the village square torches of raffia produce a strong and romantic light.

PANGWE LADLES

West Africa

Ladle for the Use
of Men

Calabash Ladle



Pot Ladle

After G. Tessmann

In the beautiful Polynesian homes the harmony of the interior decoration measures up to the splendour of the carved and painted exteriors. On Ponape the spaces between the carved pillars are walled with bamboo sticks so richly corded with multi-coloured cocoa strings that the wood is completely hidden. The black, red, and blue cords form intricate wall patterns, and are trimmed with tassels and shells. Even the bamboo floor over the stone foundation is covered with cocoa cordings. The fireplace is a square in the middle of the room. Sleeping mats, calabashes of polished coconut shells, nut graters, stone mortars and pestles, and many other tools and pieces of household equipment are tastefully arranged. Finely ornamented baskets contain shell knives and tools of coral and fish-skin; spears, paddles, ornamented clubs, and the women's weaving tools adorn the walls. Not the smallest trace of refuse or dust is tolerated. Exquisite curtains separate the sleeping-quarters from the living-room,

and the carved head-rests are of a variety of woods, often with bamboo feet. The exquisitely shaped wooden bowls and dishes are richly decorated, and the soft tapa cloth of curtains and clothing shows hand-painted patterns. Fans and fly-whisks add further touches of luxury.

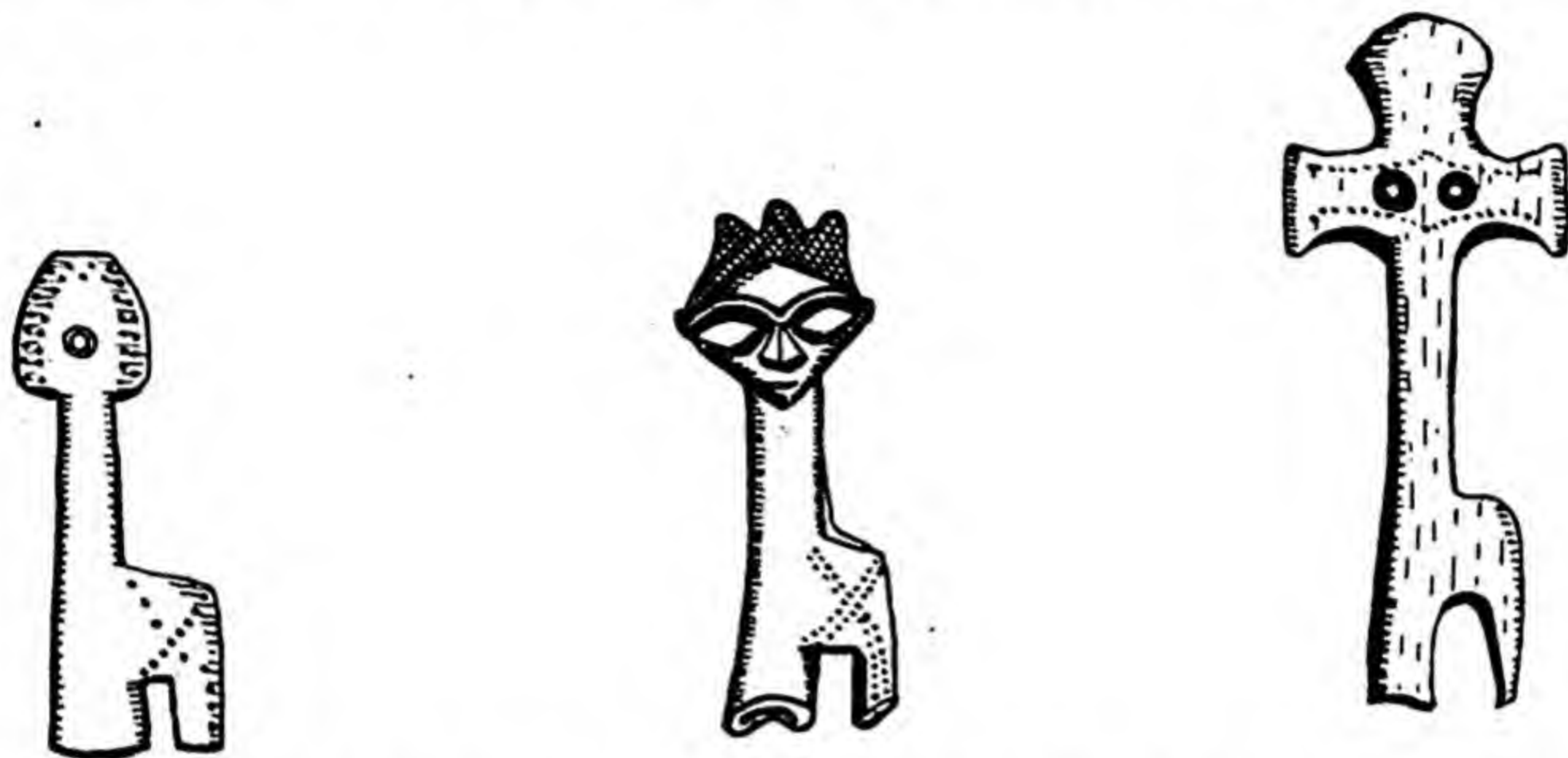
The homes of the high cultures of the New and the Old Worlds have absorbed, adopted, and transformed most of the possessions and inventions of earlier times. They have improved on them through precise methods of manufacture and professional specialization, which the primitive builder and craftsman could not develop.

Examples of sheer luxury are found in the remains of homes older than the earliest records of our history. The excavations of prehistoric sites at Abu Shahrein, the old Eridu, brought to light carefully smoothed floors, and doors with hinges fashioned from stones imported from distant regions. Deep cellars and round windows can be traced back to the so-called 'band-ceramic' period of the Neolithicum. The houses of the oldest Anau culture were built of sun-dried bricks and were also equipped with hinged doors.

Wherever scientists uncover ruins of ancient temples or palaces built at the dawn of history, astounding evidences of supreme luxury are found, examples of a standard of living unknown to modern civilization. In 1946 Russian scientists found in Southern Siberia near the Chinese border the remnants of a Chinese palace constructed before the birth of Christ : it was filled with treasures of overwhelming perfection. The main hall of this palace of Khakassia covers an area of about 140 square yards. Two kinds of tiles cover the roof, on which there are round medallions with Chinese inscriptions. The massive bronze door-handles display horned genii. Clamps, bolts, bronze buckles, golden earrings, and jade saucers were uncovered in the ruins. A furnace with a built-in tubular heating system distributed warmth throughout the building. Modern architects still try in vain to imitate the Roman method of heating the floors of houses from beneath ; equally advanced heating methods have been known in Korea for centuries. The magnificence of the excavations of the Babylonian Ur, to-day El Mukajjar (many of the finest specimens recovered from these sites are exhibited in the British Museum), make our modern artisans wonder whether they will ever be able to reach the perfection attained during the third millennium before Christ.

It is one of the ironies of history that the white man who adopted the ideas of the primitives to adjust them to his needs has often changed them so much that the aborigines of our time have difficulty in recognizing their purpose. When a native of the Belgian Congo

heard a white man whistle on a key he mistook the gadget for a musical instrument and carved key-shaped flutes of ivory for his tribesmen, so that they might share the latest European invention. A crude white man's kitchen ladle, mended with an iron screw,

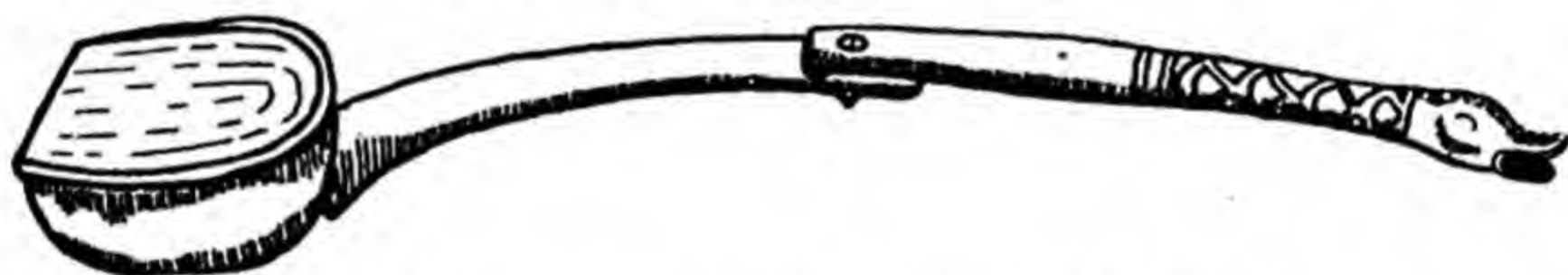


IVORY FLUTES, IMITATING EUROPEAN KEYS

Belgian Congo

Royal Conservatoire of Music, Brussels

impressed another Congo native so profoundly that he carved one for himself just like it but in one piece, with the screw and the mending so neatly imitated that even the lower tip of the screw protruded from the 'mended' part.



ONE-PIECE IMITATION OF A WHITE MAN'S MENDED LADLE

Congo

Museum of Ethnography, Stockholm

When something goes wrong with any of our household tools we tend to act as if the object showed malice. It is by no means a new idea that at times the things created by man to lighten his daily drudgery get out of hand and that he may lose his control over them. Similar was the fear of the sorcerer's apprentice who stammered, "How can I get rid of the spirits I called up myself!" Atomic power, that supreme triumph of modern science which snatched from the Builder of the Universe the secret of His suns and planets, has already reared up so threateningly that the whole world fears the consequences of our enlightenment.

This ancient human fear of the potential dangers of the things made by man himself induced an old Peruvian artist to paint a pictorial story of "The Revolution of the Tools" on a vase of the Protochimú epoch. The lower border of the design, depicting waves and fish and seals, indicates that the rising of the objects against their human exploiters took place at the sea-coast. Only three human figures are shown, two of them prisoners in chains, the third under attack. The rest of the characters are things, led by a cudgel which threatens the man in the centre; the rebels are belts and head-dresses, slings, catapults, helmets, purses, and pieces



"THE REVOLUTION OF THE TOOLS"

From a Clay Vase

Valle de Chicama, Peru

After W. Krickeberg

of jewellery. Now that their day of revolt against their employers and suppressors has dawned, they are ready to take revenge against his presumptuousness. All this is in accordance with an old Quiche myth which predicts that the day will come when dogs and chickens, pots and pans, and grinding slabs will make man taste the hardships to which he habitually submits them—the slabs will grind their human inventors; the pots will boil them; the chicken slaughter them; the pans will roast them. This has happened before, says the saga, and it will happen again.

Long, long ago the sun disappeared and the world was shrouded in complete darkness for five long days. This was the signal for the things to mobilize. The stones began to grind, the mortars and pestles marched against their masters, and even the llamas attacked their keepers in the stables as well as in the fields.

Look around you, all-knowing *homo-sapiens*. Be kind to the things which serve you. Handle them gently—they might resent rough treatment. Appreciate the never-ceasing readiness of the gadgets you devised to serve you.

CHAPTER TWO

Accessories of Allure

HERE COME THE JEZEBELS! The preacher of a small New York sect thus greeted the appearance of two visiting ladies who, fond of occasional 'on-the-spot' investigations, had ferreted out his 'church' in the big city's reservoir of human oddities. The worshippers, following with their eyes the accusing finger of their prophet, watched the smartly made-up though utterly discreet intruders blush—it was a most embarrassing situation!

Later this little incident furnished the material for a long discussion, and the question arose: why is it that some people associate the idea of 'sin' with a well-groomed woman; why do they ascribe low character to a "female who paints her face"? Is the idea of enhancing artificially the charms of nature really so alien to the 'unspoiled' human mind?

It was not so some ten thousand years ago, and it is not to-day in many sectors of the world where peoples who never heard the term 'cosmetics' still follow the ancient rules of allure for the sake of æsthetic joy and for hygienic and spiritual reasons. When it comes to the display of taste 'savages' have a very definite notion of what they consider attractive and what not, and they miss no opportunity to express their taste freely. Men and women alike take part in the general effort to give to their bodies and their clothing the touch of beauty; and while man in modern civilization has been forced into a subdued attitude as far as his vanity is concerned, his brethren of the wilderness openly compete with the charms of the fair sex and often even surpass them.

While in Western civilization the variations of taste are extremely



FAVOURED WIFE OF CONGO
RULER

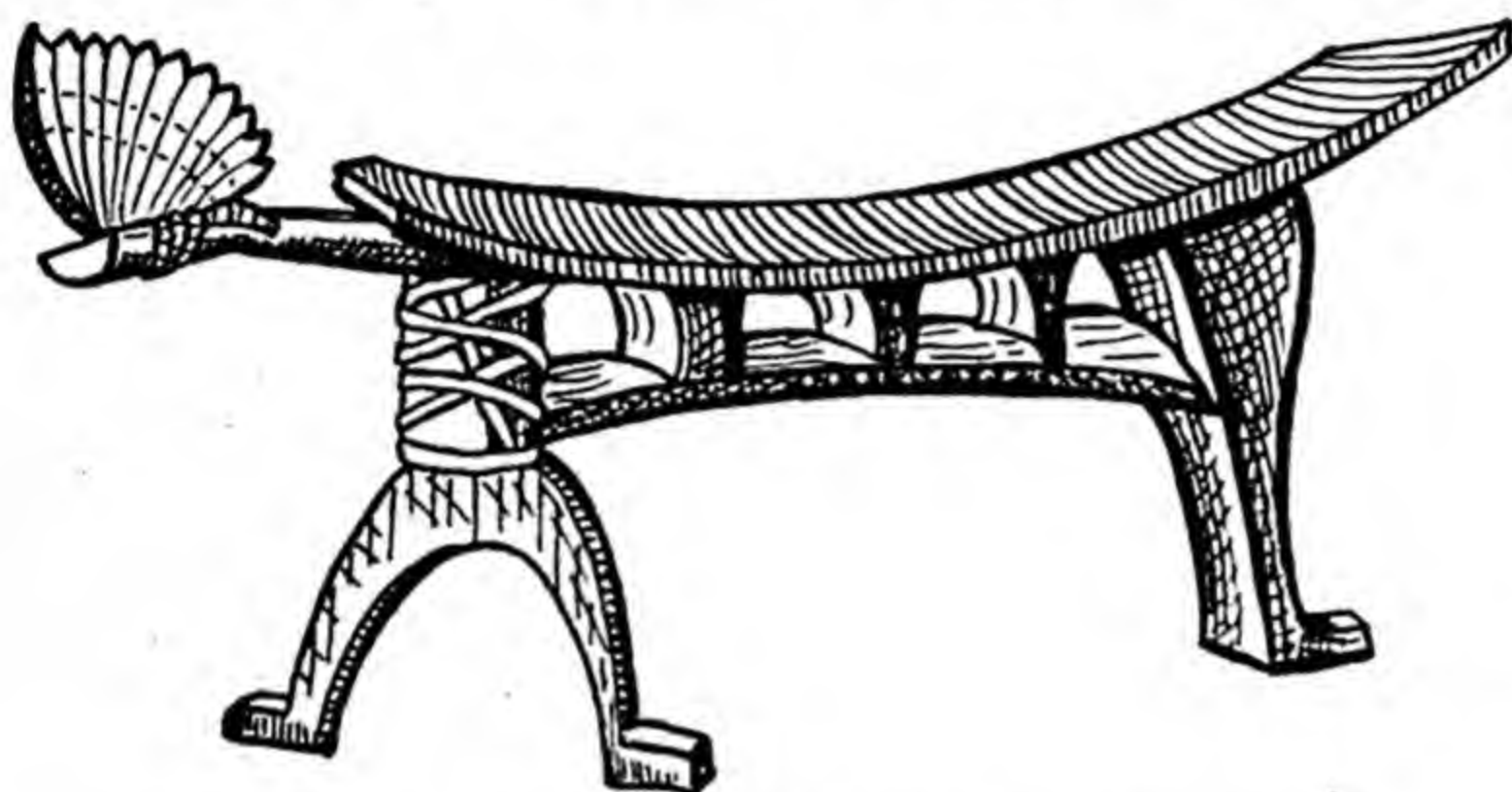
*American Museum of Natural
History, New York*

numerous, these variations are even more pronounced among the different races and tribes of primitive peoples who set for themselves their own standards of attractiveness and are not easily persuaded to copy their neighbours' fads.

An insight into the prerequisites of attractiveness as conceived by, for instance, the Maori, was furnished by Elsdon Best, who states that, in order to be considered good-looking, a girl has to have "shapely legs with a well-poised body, a comely junction of the trunk with the buttocks, and a straight-legged, erect carriage"; while male beauty, according to the Maori women, consists of "a stalwart, mature aspect, with well-shaped body, handsome face not too wide, large eyes that look with a mild expression upon man." In addition, such an Adonis must be "kind, with shapely loins." This is not too far from our own, the Greek ideal of beauty. In contrast to this, the Koreans, a high-cultured people, feel differently, especially concerning 'Greek'-shaped faces, and they ran away in horror when the Second World War brought them in contact with their liberators, the American soldiers, who, to them, were "giants with big noses." Many North American Indians, like the Hopi, expect a beautiful girl to whiten her face with corn-meal and to wear her hair in butterfly whorls. There is nothing vague about such conceptions, which all testify to the fact that at all levels of culture man created his own laws of beauty. But beyond such detailed specifications we notice among the children of nature one point on which everybody seems to agree: the fact that cleanliness is the basis of all good looks. There is no well-bred savage who would abuse the iron rules of bodily hygiene. The admonition, "You wash like a white man!" (who often, while living among 'primitives,' cleans merely his face and hands) is, indeed, one of the worst insults a savage can hurl against any of his tribesmen.

Whoever has lived among primitive tribes will report on their great neatness. O'Connell, who shared the life of the natives of Ponape for a long time, stresses this point by saying that they bathe two or three times a day and that anyone who neglects this healthy custom "loses his social standing. He will be expelled and left in shame." Equally strict are the Creek Indians in their observance of at least a daily bath in a river (and four rolls in the snow during winter). How strongly this custom prevailed among the Indians was emphasized by the old explorer Adair, who remarks: "The neglect of this bath hath been deemed so heinous a crime, that they have raked the legs and arms of the delinquent with snake's teeth."

Numerous reports and testimonies of explorers emphasize this happy-to-be-clean attitude of savage peoples wherever water is available. But even where water is scarce, as, for instance, in the Sahara Desert, the natives take care of the proper cleansing of their bodies by subjecting themselves to the hygienic effects of the desert sands. In the arctic and subarctic regions of the globe, where an extremely cold climate makes it difficult to clean the body, primitive man invented the steam bath. For this special purpose they construct bath-houses in which stones are first heated and water poured upon them to produce the steam. After reclining in the



WORK STOOL FOR COCONUT SCRAPING

With cardium shell used as scraper

Marken Islands

After Parkinson

dense steam the bathers often finish up with a quick jump into the cold running water of their creeks and rivers. Sometimes such a 'Turkish' bath can accommodate many persons, while in other instances small cabins for one or two steam bathers are preferred. Even sick people undergo this cure in the hope of getting rid of their fever, often with the magic assistance of the medicine-man's songs and prayers. The modern Scandinavian sportsmen whose countries have preserved the ancient custom of this type of steam bathing ascribe much of their physical vigour to its beneficial effects.

The frequent exposure of the skin to hot steam and cold water and, in tropical climates, to the surging rays of the sun necessitated a regular care of the exposed parts of the human body. Consequently, there is practically no tribe on earth whose members would not make use of fats and oils and greases to smooth, cleanse, and lubricate their skins. The calabash or coconut-shell oil-pot is, therefore, the regular stand-by for both sexes, who rub themselves with 'cold cream' as often as they can. Some African

tribes use the oil of the raffia palm-tree exclusively for beauty purposes, since most insects are allergic to it. In the South Seas the most widespread provider of greasy lotions is the cocoa palm, which to-day furnishes the skin preparations of our own fashionable ladies with their most effective ingredient. Ingenious methods are applied by the natives to split and grate the coconut with the help of adequate tools. Some submit the minced substance to a process of fermentation under the sun, by which the oil is segregated and can easily be removed for further use in cosmetic blendings.

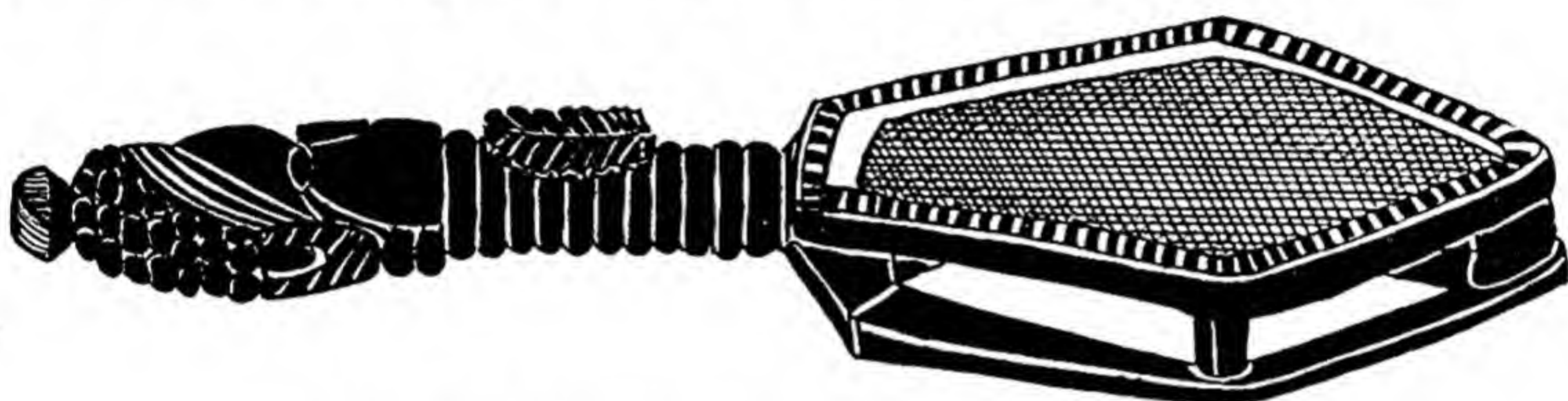
Such mixtures, with palm oil, castor oil, lard grease, or even butter as their basic ingredients, may contain redwood, ginger-root, herbs, or metallic powders, most of which have proved their protective qualities not only against sunburn or insect bites but also, as many explorers indicate, against the influences of cold weather and rough winds. These pastes may cover parts of the skin or even the entire body, and it has been reliably reported that this original protection of the skin of many tribes has been far more beneficial to the health of its users than the cheap cotton garments which were later forced upon the natives by shrewd 'civilised' merchants.

The mixture of colour and greases to produce a cosmetic and hygienic stand-by is very widespread, especially among Australian and African tribes, who enjoy its double function as a remedy and as a decorative medium.

Colour plus grease? Well, isn't this the correct description also of all the grease paints found in our own boudoirs and our theatrical dressing-rooms? Indeed, this brings us right back to 'the Jezebels.' The art of 'making up' with grease paint can by no means be attributed to 'modern decadence' or to the frivolous whims of the moment. Long before any records of written history were started men and women alike were conscious of the attractiveness of selected colours blended with the human skin; and they knew how to find, to recognize, and to prepare them for their own use as cosmetic aids. Even the very strict territorial laws of certain tribes who allow no trespassing include occasionally one concession: that neighbouring or even foreign tribes may cross the protected tribal land on their excursions to obtain the 'vital' colours which may be found only at one or more far-away places.

The cave-man and his cave-woman went out in search of these colours, as remains of ice-age colour mines prove. They had their own formulas for the blending of the colours with different greasy substances for their 'dressing-table,' exactly as do to-day's children of the wilderness. The discoveries of the palæolithic sites

have preserved these cosmetic colours of the ice age, ready-mixed in ornamented bone or slate containers, with palettes and pestles for their handling. Practically all former homesteads of palæolithic man show abundant supplies of these cosmetics ; and even the dead in their graves were provided with generous quantities of grease-blended colours, to be taken along on the long journey to the land of the departed. In later periods of human history, from the Neolithic Age on, these evidences of early vanity became extremely numerous ; and more surprising even than their abundance is the variety of shades. Manuel Déchelette's analyses of the prehistoric deposits reveal seventeen different colours, with white (marly limestone), black (charcoal and manganese ores), and the ochre scale, from red and orange to the lightest yellow, as the favourites.



PALETTE FOR PREPARATION OF GREASE PAINT

West African

Museum of Ethnology, Cologne

These colours and their raw materials correspond exactly to those used in many primitive cultures of our days. The beautifully carved masks of the Gazelle Peninsula and other Melanesian regions show predominantly the three colours of red, white, and black, with some occasional touches of blue and green obtained from vegetal substances. Other shadings and mixtures have been added by other tribes, but all attribute special significance or give definite preference to one colour or the other.

However, the specific symbolic significance attributed by us to certain colours may have entirely different meaning to primitive peoples. Thus, white is, to the Pangwe, by no means the colour of purity but, on the contrary, the colour of evil, as evidenced by its importance in the 'bad' lunar rites ; but at the same time it is regarded as a most beautiful colour. It is followed in preference by black, " the colour of the night and of all that is disagreeable, frightening, and horrible," while the joyous red symbolizes all the good things of life. These tribes also distinguish lilac as the colour of the dead ; all plants with lavender blooms contain the word

kun or *bokun* (soul) in their native names ; and the bluish shadows of the trees mark them as the favourite abode of the departed. Beauty is often identified with the 'demonic' white. They show no admiration for the plumage of their magnificently multicoloured birds, but the plain white heron, *Bubulcus ibis*, excites them by its "overwhelming beauty." In contrast to this, the sombre black is, to the Atxuabo of Portuguese East Africa, "the colour of joy."

Often the vocabularies of primitive peoples show, by their terms for colours, the variety of shades they distinguish. The Chama of eastern Peru know yellow, 'blue-and-green' (one word), purple, and 'banana-orange' ; while the Sipáia Indians have individual expressions for red, yellow, orange, dark blue to dark green, light blue and light green, brown, grey, black, and white.

The habit of attributing symbolic meanings to certain colours has entered the religious and profane conceptions of all high cultures, including our own. In the ancient Aztec codices the four quarters of the globe were indicated by individual colours, with red for the East, blue for the West, yellow for the North, and green for the South ; while ancient Chinese and Iranians assigned blue to the East, red to the South, white to the West, and black to the North. The demons in the Lama temples of Tibet are always red ; most of the Tibetan gods sit on red lotus lilies, with the white flower reserved for Chanrasig, the highest *Boddhisatva*, and the blue for Tara, the 'madonna' of Lamaism. Even each element has there its own symbolic colour : wood is green, fire is red, the earth is yellow, iron is white, and the water is blue. Every syllable of their famed prayer, the OM MANI PADME HUM ("O you jewel in the lotus, amen !"), has its own colouring. OM, symbolizing the skies, is white ; MA, symbolizing the word of the *asuras*, is blue ; NI, symbolizing the world of man, is yellow ; PAD, symbolizing the animal world, is green ; ME, symbolizing the world of the pretas, is red ; with the concluding holy HUM, which bars the gates to the hells, conceived as black.

Numerous are the analogies in other high cultures like Egypt, India, and China. The same applies to the colour symbolism of our Christian ritual with the holiday or mourning decoration of the churches in red, white, green, purple, black, etc., and the carefully prescribed colourful regalia of the members of the Catholic clergy. And even in our daily figures of speech we use colour symbolisms, although of different content, when we speak of 'the green-eyed monster,' 'a blue Monday,' 'the reds,' or 'clad in the colour of innocence,' while our governments publish 'blue books,' 'white papers,' and 'black lists.'

The spectrum of primitive man is, as we saw, not so manifold, but he certainly knows how to make the most of his favourite colours. It was reported in early times the American Indians painted their skins red, and consequently they were called 'red-skins' by the old pale-faces. This custom often included even babies and infants. Red and black minerals used for the pigments were often carried about in small painted deerskin pouches. The Nor-Papua of New Guinea cherish the red *kekevak* colour, which they burn and mix with coconut oil to use always on their bodies. For face, arms, and legs they prefer a yellow earth from the Sepik; for breast and thighs a white colour, which they gain from near a sulphur spring, is fashionable.

Tradition may prescribe different colour fashions for the two sexes, and even different ways of applying the paint. This is the case among the Miskito and Sumu Indians of the Atlantic side of Honduras and Nicaragua, whose women choose for their fancy patterns paint from the red seeds of *Bixa orellana* L., a shrub or small tree, while the men do not bother with intricate designs but simply cover all exposed parts of their physique with a black melted gum over which they apply a coat of turpentine. Red is also the favourite colour of the eastern Bolivian Tirinié women who paint their entire faces, with the exception of nose and eyelids, with vivid *urucu*, which the Neoze women of the same region merely use on cheeks and forehead. The Papagonians mix their black, red, and white earth colours with marrow and apply them thickly to their bodies 'as a protection from the surging wind'; and the South African Bantu, like many Australian aborigines, use fat salves mixed with ochre. African shepherd peoples often use cow droppings or even the urine of cows as a blending material for their paints; their belief in the hygienic qualities of the latter goes so far that many of them hurry to wash their hands in the warm jet when it appears under a cow, and insist on using it as an eyewash.

Again and again we find an ardent preference for red, manifold as its raw materials may be. The Montagnais-Naskapi Indians, who refrain from using this beloved shade on their skin, nevertheless declared during my visit in Labrador that no colour on earth could be compared with the magnificence of red, which they mine as vermilion for the decoration of their tools, canoes and clothing.

Many high cultures have maintained this ancient preference. The Hindu women of to-day still dot their foreheads with red *kum kum* powder, and the Mohammedan world depends largely on the use of *Lawsonia inermis*, the leaves and stems of the henna

shrub, to achieve red colour accents as an expression of good grooming, beauty, and happiness.

That allegedly very modern accessory of allure—the lipstick,

PREHISTORIC ALLURE



Palæolithic
Figure from
the Grottoes
of Lespugue,
Haute Garonne,
France

*After Le Comte
de St Périer*



Dancing Women
Rock Painting from Cogul, Spain



The "Venus of
Willendorf"
Ice-age Figure
of Carved
Limestone
*Naturhistorisches
Staatsmuseum,
Vienna*

which also is red—actually dates back to the ice age. Specimens of 'convenient size' and pointed at the top have been found in many prehistoric caves. For countless ages lipsticks have served to deepen the colour of women's 'rose lips.'

From the earliest times geometrical patterns served to accentuate even more the favourite colours and the taste of their wearers.

Such painted designs may or may not indicate special qualities like membership in a particular tribe, the coming of age, social standing, bravery, and the like. Even the bones of the dead are occasionally exhumed and decorated with intricate ornamentations, and many uncovered prehistoric manifestations of plastic art, like, for instance, the famed "Venus of Willendorf," still show signs of painted patterns in red. That this habit prevailed also during classic times is evidenced by the ornamented arms of the Phrygian woman with child on a vase in the British Museum and by the report



TATTOOED CHOROTI
GIRL
Gran Chaco
After R. Karsten



SCAR-TATTOO
Yao, East Africa
After K. Weule



FACIAL PAINTING
Thompson Indians
After J. A. Teit

of Ammianus Marcellinus (A.D. 330-400) on the Agathyrsians, who painted body and hair in blue.

The striking effect of painted patterns on the human skin inspired the idea of frightening the enemy with this 'psychological' weapon. Cæsar was duly impressed by the blue war paint of the Britanni, which gave them a 'horrible' appearance ("Omnes vero se Britanni vitro inficiunt, quod cæruleum efficit colorem, atque hoc horribiliores sunt in pugna aspectu"); and Tacitus saw "ghost armies" of painted Germanic Harians, whose later successors were the modern black-faced commandos of the Second World War.

Paint and pattern may, among primitive tribes, occasionally be outlined by additional glued-on materials which, following the principal design, give it a more plastic appearance. The Central and Northern Australian natives add such touches in white feather-down to the red and black circular symbols of their skin paint to achieve a highly original effect. Certain North American Indian bands use corn meal and seeds for similar adornments.

The desire to give a more lasting quality to the fully applied

patterns in a fanciful manner led to the invention of clay stamps or *pintaderas*, as the Aztecs called them, with whose help a fixed pattern could be printed on the desired spot. These, too, were known already during the ice age. To-day the Gran Chaco tribes use them; so do the Dayak of Borneo, who stamp their favourite ornaments on their skins and sometimes use the pattern thus acquired as an outline for their tattoos.



WEST AFRICAN
HAIR-STYLE AND
TATTOO

Wood Carving
*Museum of
Ethnology, Cologne*

The painted pattern, however, washed off easily and faded. This disadvantage inspired the birth of another idea: to find a means of making the chosen design permanent. The result was the tattoo—a custom of world-wide distribution. Colour is not always added to emphasize the incisions and punctuations that make the pattern; if none is used we speak of a “scar tattoo” of the type used in the old Tasmanian culture. To-day its application is most frequent in another part of the world, the African continent.

Both sexes of the Banda—a Ubangi band—prefer symmetrically arranged incisions in the skin of breast, abdomen, back, and arms. The Pangwe outline with soot the desired pattern on their skins, sculpture it with a knife, and rub the wounds with burnt resin, thus decorating their entire bodies with ‘lovely’ scars. This beautification is considered indecent on the upper thighs, and the Jaunde women who cannot refrain from decorating these, too, are considered of low morals. The natives of Khartoum tattoo their small babies with the tribal crest by incising the identification ornament in their cheeks. The wounds are rubbed with a mixture of saltpetre, ashes, and selected herbs. After a few days the incisions swell to coil shape and remain as broad scars, the characteristic mark of the Sudanese.

The scar tattoo may or may not be used in combination with the tattooed colour ornament. On account of its more delicate execution the latter allows finer lines, more intricate designs, and a more precise and symmetrical arrangement. The best results in this respect have been reached by the natives of the South Seas and, among them, especially the Maori of New Zealand, whose magnificent spiral ornaments give permanent attractiveness even to the artistically preserved and reverently worshipped heads of their

dead. The carved figures in which the Maori culture is so rich commemorate these characteristic tattoos, sometimes in huge dimensions and all over their unclad bodies. Even a Madonna carved by baptized Maori for their church shows these ancient patterns all over her unclothed body. This typical Maori tattoo, which expresses social rank and membership in a band thereby specified, is an object of sincere pride even to the oldest dignitaries, who see their own individualities thus expressed and glorified. The experience of a white artist has shown that even the most realistic portrait of a Maori chieftain was sneered at by its model who, with a superior attitude, drew his facial tattoo pattern in the sand to explain to the white man: "This is what I am. What you have drawn there is of no meaning."

The British sailor O'Connell, who became the son-in-law of a Ponape chieftain, had to undergo upon his acceptance into the noble family the painful procedure of having his entire body richly tattooed with fancy ornaments, which he later learned to identify as the names of the departed chieftains and nobles of the tribe. For a whole week two female artists handled the thorn-studded tattoo boards, hitting him neatly at the previously outlined spots and nursing his wounds with coal and oil.

Many North American Indian tribes also indulged in the adorning art of tattooing, be it for women alone as with the Tübatulabal and Kamia, or for both sexes, as in south-east Alaska.

This custom has infiltrated the high cultures. The vertical lines marking chests and brows on the ancient figures on the bronze plates of Benin are tattoos. The invaders of modern Japan were stunned by the sight of the bodies of men and women who were completely covered with tattooed images of gods and men, quotations from the classics, scenes from plays, flowers, and animals. In our Western civilization the tattoo has lost its original social and artistic significance and has been degraded to vulgarity, to be used merely by adventurous sea-dogs, show people, and criminals.

The more parts of the body these 'artistic' painting and tattooing operations involve, the more it becomes necessary to remove the body hair. Many tribes adhere, in addition, to the æsthetic conception that a complete depilation of all but the hair of the head is a 'must' for a well-bred person. Consequently we find a great variety of methods of getting rid of unwanted hair, which may be plucked out with shells ("quick as with a Christmas goose," says O'Connell), or with the help of wooden sticks, with metal pincers, or simply with the finger-nails. This custom has become part of the Hindu and Mohammedan religious requirements.

Even facial hair may be considered objectionable. Indians often consider any trace of beard as distasteful, and check its growth by rubbing their chins with wood ashes. Since nature has made the whole race nearly beardless anyway many tribes just remove their eyebrows, hair by hair, to make their faces 'clean.' The plucking or shaving of the hair-line to achieve the effect of a higher forehead is practised by Papuas and Indians, and is also known in Africa.

The regard of the beard as an asset or an obstacle to male handsomeness and the change of beard fashions through the ages belong to the most fascinating chapters of cultural history. When we consider the fact that modern historical study divides beards into fifteen standard types we can well imagine the multitude of pre-civilized forms with all their side-line ramifications. From the full beard of the Australians, the corkscrew goatee of many Papuas, and the 'Assyrian' African forms to the 'naked' faces of the Indians there is an immense multitude of varieties. As for civilized man, the archæological facts seem to prove that the oldest fashions of classical times favoured the clean-shaven face.

The earliest evidence of antique beards appears, according to Mötefindt, towards the end of the Cretan-Mycenæan period. The most interesting form of beard is the semicircular fringe which frames the otherwise clean-shaven face. It is the 'classical' beard which we know from the geometrical vases of the Athenian cemetery of the post-Mycenæan period and from the seventh-century bronze relief of Olympia. It appears also on the reliefs of the temple of Assos, and is worn by Zeus and his adorants (Acropolis of Athens). How persistently this fashion survived through the centuries is evidenced by a miniature of King Edgar of England, dated A.D. 966, which shows him sporting the fringe beard. Exactly the same type of beard is worn by to-day's natives of southern Arabia, the Somali coast, the Singhalese of Ceylon, and in eleven regions of Oceania. Representations of the Aztec gods, Quezalcoatl and Tecciztecatl, show them with the shaven upper lip and this age-old fringe around their chins. In the cultural region of the Mediterranean, from about A.D. 500 on, this was supplemented by the fashion of the full beard, which replaced it almost completely about one hundred years later.

Mötefindt, who has given much thought to this attribute of masculine attractiveness, distinguishes three clearly defined phases of this fashion—the first and oldest when the fringe-beard was the characteristic feature of one Semitic tribe. As soon as the peoples of the Near East came into contact with the Semitic culture this type of beard became fashionable among them. The second phase

was entered one thousand years later, when the fringe was no longer restricted to Semitic tribes but had become common among all peoples of the Near East. The Egyptians of the eighteenth and nineteenth dynasties identified any man with this type of beard as a native of the Near East. Only during the third phase did it appear detached from any ethnic group, freely following the fads of fashion. It is still found to-day not only among many tribes of primitive cultures but also among European fishermen and peasants.

There exists hardly one single element among the accessories of human allure which cannot be traced back to the dawn of culture ; and many of the fashions which we favour to-day throw light upon our state of mind which in some way or other is spiritually connected with these expressions of our external appearance. This is especially true of feminine hair-styles. Legion indeed are the shapes of coiffures preferred by the different peoples through the ages of unwritten and of written history, and when a new fad makes its triumphant debut the historically schooled student of the attributes of human vanity can in many cases interpret it as the evidence of a cultural change as well.

No need to say that climate and form of economic living conditions play a decisive rôle in these changes. An elaborate coiffure requires time and a tendency toward complacency, as are provided by the agricultural form of economics, while hunters and food gatherers, with their unstable form of existence, can hardly afford to waste many hours on a complicated arrangement of their hair. Although we can roughly distinguish between three principal types of hair : short and kinky (Pygmies and Negroid races) ; wavy and of medium length (Australians, Veddas, and whites), straight and long (Mongolian races), these technical distinctions are so general that they cannot do justice to the multitude of actual varieties.

A better general picture is provided when we consider the cultural age of the different ethnic groups. Among the Australians, who can be considered very close to the cradle of earliest mankind,



WEST AFRICAN 'HELMET'
COIFFURE

After Kromer

we find hardly any artistic hair-styles. If we look for the extraordinary, we have to visit the agricultural tribes of West Africa. Compared with their coiffures, the hair fashions at the court of Marie Antoinette can be called drab and unimaginative. Among them, a respectable coiffure is a masterpiece of sculpture, built to last for months and moulded with the aid of clay, animal fat, and similar ingredients. Glass beads, cowrie shells, brass ornaments, buttons,



CAMEROONS COIFFURE

Sculptured with cow droppings

After H. Plischke

and feathers provide the last touch to these monuments, which are often held in place by structures of leaf ribs, palm marrow, moss coils, etc. The resulting masterpieces, whose completion may take months, are so artful that they give the impression of a sturdy hat or helmet, which they sometimes actually are. Often their hair fashions are depicted on specimens of their plastic art long after the fashions themselves have changed and even after a tribe has been extinguished. This provides the white student with a history of the coiffures of West Africa, helping him in the dating of a work of art. Men and women of these peoples sometimes prefer artful wigs to the real thing; these wigs being so exquisitely sculptured and so firmly glued to the head that

only a very close inspection can reveal the difference. Tessmann counted in one tribe twenty-five different types of hair-styles and wigs, all distinguished by individual names. The Mangbetu of the northern Congo have a special fondness for long, narrow hind-heads (a shape artificially created by deformations of the skull from early childhood on); and they accentuate even more this effect of their oblong head shapes by hair-styles of a swept-back type.

Many Papua men build their coiffures with equal over-emphasis on 'architectonic' quaintness, but since these hair-styles often have another task, namely to support the gigantic masks worn during their sacred dances, vanity alone would not be a proper explanation of this custom. Strangely enough, their women and children often cut their hair short and leave it to the men to wear, in the true sense of the word, their burden. The Polynesian hair-

styles are, in general, much simpler, and mostly feature merely a small chignon. The reason is that these people are so fond of their art of tattooing that they even shave parts of their hair to furnish further opportunities for the application of their favourite adornment.

Many Indians of North and South America cut their hair fairly short, with occasional bangs over their foreheads. Some tribes, like the Apache, feature rolls and coils or broad locks in the centre of the head, while the Eskimo, who like to wear their straight tresses in simple open fashion, use an occasional chignon.

As we see from these examples, our modern civilization has taken over almost all hair-styles of former times during the different waves of fashion, with the exception of certain exaggerated West African styles. In the other high cultures the rigid religious laws have often stopped the acceptance of a fashion, as, for instance, the short bob, which is taboo among Mohammedan women and will never be accepted by Hindu beauties, to whom cut hair is the outer mark of the sorrowful state of widowhood.



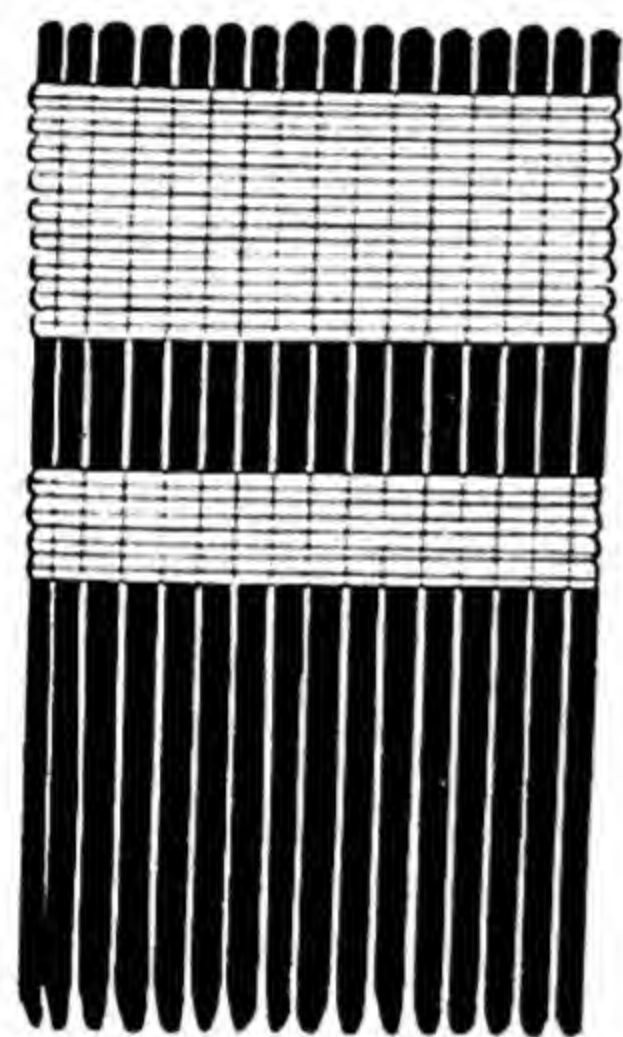
HAIR-STYLE OF MARRIED
ZULU WOMEN

When our ladies go to the beauty parlour to get a henna rinse they by no means benefit by an invention of modern sophistication, because the art of dyeing one's hair is as old as mankind itself. The custom among the North American Kamia Indians of deepening the black colour of their hair by rinsing it in "a boiled decoction of black gum from the bark of the mesquite tree" is an isolated instance, because the desire to bleach or lighten the hair colour is much more prevalent. Many Polynesian tribes bleach their frizzy hair with the help of lye or lime, which results in a reddish or yellowish effect. Not satisfied with this, they add a powder of ochreous earth to their coiffure, which contrasts strangely with their deep brown skins. This practice is so common that the explorer Ross states surprisedly that the Mount Hagen tribes of New Guinea "never bleach or colour" their hair. The British scientist Balfour builds an interesting theory on the habit of the Solomon Islanders of dyeing their hair red with ochre. Explaining the huge red cylinders of stone which crown the mystical colossal statues of Easter Island as sculptured 'red hair,' he tries to clear up the much-discussed question of the origin of the extinct original population whose members came, as he claims, from the Solomons to build on

After Carl von Hoffman

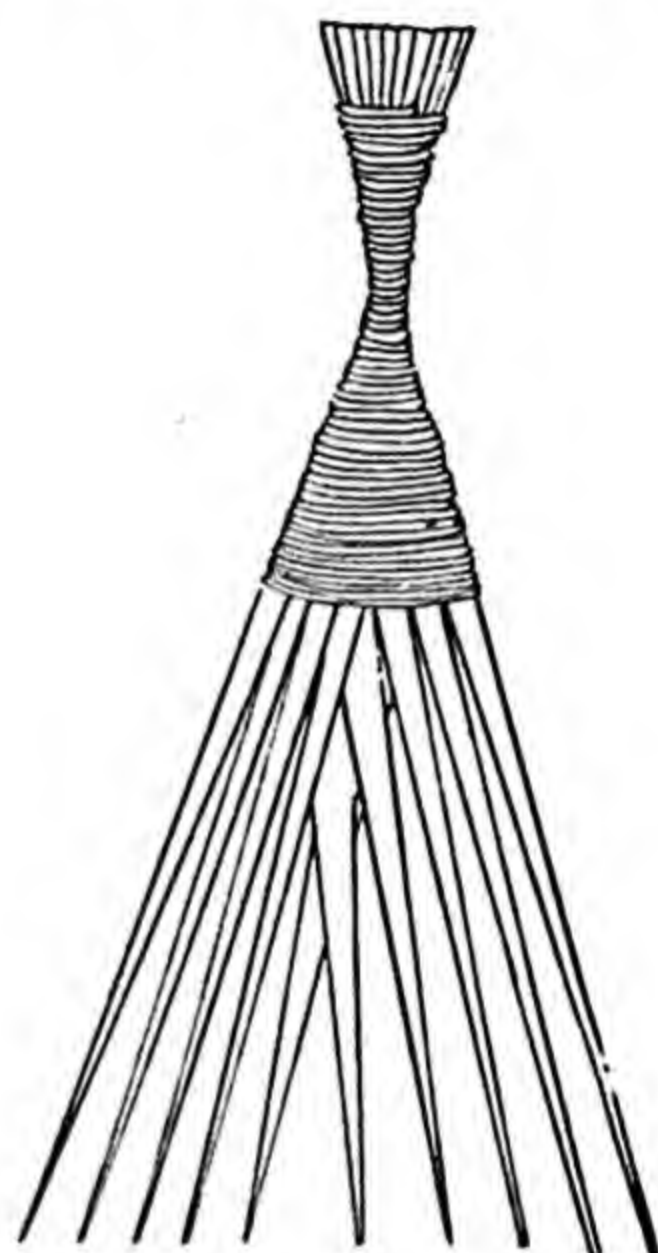
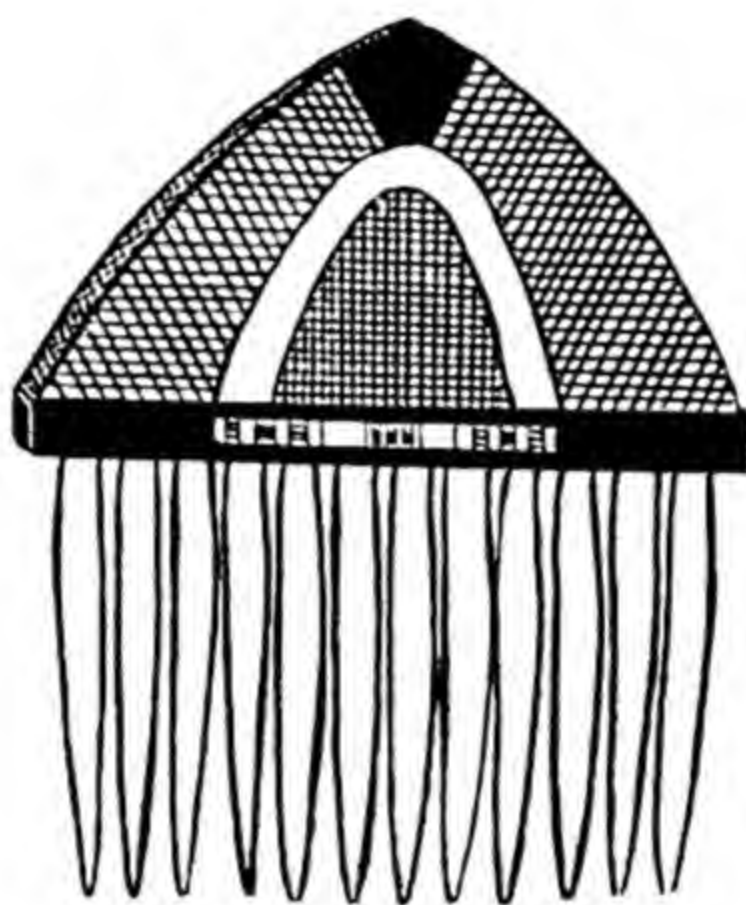
Easter Island those gigantic monoliths in their own image, with an accent on the ruddy colour of their bleached hair.

That this world-wide grooming of the human hair necessitated the invention of convenient gadgets to comb or brush it is obvious. Bone combs have been found in the palæolithic graves, and even the very primitive Fuegians use combs fashioned of toothed jaw-bones of the dolphin. The shapes of fibre brushes and wooden and bamboo combs used by other primitive tribes are myriad. The



WEST AFRICAN COMBS

After G. Tessmann



POLYNESIAN COMB

Samoa

*Museum of Ethnology,
Cologne*

most popular form is a flat bundle of wood or bamboo splinters or wisps of stiff grass, bound together to form a convenient handle. Hairpins in the most varied shapes were known in all ages.

The desire and the possibilities of shampooing one's hair are, naturally, dependent upon the permanence of the coiffure and the beauty aids available. Water-loving people like the Polynesians wash their hair frequently while swimming. Many American Indians preferred regular shampoos with yucca decoctions or similar plant products. The African coiffures are not so suited for this type of cleansing treatment. But the continuous greasing of the hair, the occasional addition of clay, and the usage of such 'lotions' as cow urine are effective remedies against dirt and unpleasant little insects.

One might assume that the great accent on a perfect appearance of the 'crowning glory' might have promoted the early invention of equally fancy bonnets or 'picture hats.' This, however, is not the case. Despite the rays of the tropical sun, most primitive tribes do not feel the need for hats, and where they appear they have a social or magic significance which is not proportionate to their utility value. The elaborate head-coverings of many African chieftains are plainly tokens of dignity (like, by the way, the parasol, which among primitives is a sign of nobility or chieftainship). This conception has lingered on to this day, from the rank-proclaiming hats of the Chinese bureaucracy to the caps of certain military and naval officers with the amount of gold braid increasing with the rank. The birettas and tiaras of the Catholic clergy are another example.

In cold climates, where the temperature forces the wearing of caps, parkas, and the like, head-coverings are of simple utilitarian shapes; but to the man of the tropics a hat is the forerunner of a crown. One of the great 'magical' possessions of the white invader in Africa was his hat or helmet, which symbolized to the natives his position as a ruler.

Among some tribes, especially of the South Seas, a hat is bestowed upon the young boy when he comes of age as a symbol of the manhood which he has to earn under hard tests of his courage. The Kabiri of New Guinea call this hat a *diba*. It is of conical shape, covered with lime and decorated with feathers or flowers. The men glue it to the head and do not remove it even during sleep. The Mount Hagen tribes, also of New Guinea, allow their young men to wear a hat "as soon as a beard appears on their chin"—they call it *woinia* or *kan ku*. The men of a neighbouring tribe, the Murik, are entitled to wear a hat only after their initiation; O'Connell saw this in Ponape. There are similar parallels in an entirely different part of the globe: among the Indians of the north-west coast of Alaska, where such a hat was known as a "cloud hat."

This strange, conical head-covering has played a mystical rôle throughout the ages. At some point it seems to have lost its meaning of rank and dignity and to have acquired a sombre or



MAN'S CONICAL
CAP, 'DIBA'

Affixed to the hair
by glue

Kabiri, Papua, New
Guinea

After A. H. Haddon

demonic significance : it became the magician's hat of the Middle Ages, the mark of witches and evil ghosts. In the eleventh century its wear was decreed as obligatory to the Jews of Europe, the prescribed colour being yellow, and Saxon coins of the year 1444 (the so-called 'Jew pennies') show a bearded man wearing such a hat. Le Sage lets his Gil Blas witness a public burning at Toledo of the victims of the Spanish Inquisition who wore "so-called *carochas*, *i.e.*, conical-shaped high hats of cardboard, covered with the painting of flames and demonic figures." This ancient hat is still to-day the trade-mark of Halloween witches and circus magicians, and has reached its lowest degree of dignity in the 'dunce hats' worn in shame by unruly schoolchildren. Its long and colourful history is another proof of the fact that the tracing of the origin of ancient things often leads to fascinating revelations.

The differences in the opinions of different peoples about the same object are always interesting ; and the heterogeneous tastes are often amazing. Take, for instance, our belief that white teeth are an asset to attractiveness. Not all peoples think so. But whatever their æsthetic ideal, there is no tribe whose members do not try to reach it.

Closest to our own ideas comes the desire to have white, clean teeth. The Nuer use ashes and cow drops in their daily efforts to achieve this desirable whiteness. The Pangwe are so fond of their teeth that they carry their tooth-brushes around in the shape of brass-trimmed walking-sticks whose upper end is split into many bristle-like spikes. Whenever the contemplative stroller feels the urge, he stops to give his teeth the 'once-over.'

In complete contrast to this, the Dusun (Borneo) ideal of an alluring mouth must display black teeth. The skilful method applied to reach this goal has been described by the explorer Staal, who stresses the fact that the dyeing procedure is so sacred that it may take place only before the great devils' feast of Meginakan. Here follows the recipe : "Quava leaves are pounded and mixed with ashes of some wood (*gombah*), and the mixture smeared on the teeth. A strip of banana leaf is folded and laid on the teeth and pressed down to prevent the 'paint' from being soaked off. . . . They keep this on for about forty hours. Then the skin of a creeper (*timbahung*) is pounded and mixed with lime ; the banana bandage is taken away and this new mixture rubbed on. When dry they keep black." These people also like to 'behead' their teeth by filing them down with a rough stone. Despite this practice they never suffer from toothache, the same author affirms.

" Though the dental lies bare and remains to rot . . . all chew the *sirih*, and this is clearly a preventive of toothache."

This habit is one of the many forms of tooth mutilations practised for various reasons by many primitive tribes. Often it is part of the initiation ceremonies and kindred to the conception of the dying moon. It may mark the fact that a person has come of age. Some tribes, like the Nuer, who break their six- to seven-year-olds' lower incisors, explain this with the remark : " We do this to demonstrate by it the difference between man and beast." Some merely file the front teeth into fancy spikes, which necessitates the use of a chisel. Among the south-east Australian Yuin this ritual of chiselling off part of their young men's teeth is performed by a mystically garbed old member of the tribe who is supposed to be the Supreme Being ; and when he begins to use his wooden chisel none of his young victims dares to betray the slightest sign of pain. Tesson describes the tooth beautification method of the Pangwe : " The patient, lying on his back, bites firmly into a wooden spool. The dental artist sets a small iron chisel on the tooth and, using a piece of wood for a hammer, hits off the undesired parts splinter by splinter." Other original reasons are given for this custom, as by the Akamba, who told Lindblom ; " We deform our teeth because this enables us to spit nicely [artistically]." A West African Machako man told him a little story which the Swedish scientist wrote down just as he heard it :

Some girls went away to get their teeth chipped. They were chipped. And one girl had six teeth chipped and two taken out. And the girls were three in number, and one of them had got her teeth chipped very beautifully. Then they said : " Let us see who has been chipped best and who has got her teeth best taken out ! " They said : " Let us spit ! " They spat. The one that had her teeth well chipped spat much farther than the rest. Then they became excited with envy, and threw her in the water, and she died.

The story is finished.

Another odd dental mutilation is the incrustation of the teeth with precious stones and metals, mostly practised by peoples who belong to the high cultures. The Dayak and Batak drill holes into their front teeth, and close them again with small disks of brass, gold, or mother-of-pearl. The Maya of Yucatan used gold or precious stones in a similar way ; and the natives of Ecuador and India of to-day boast of the same fashion. But whatever the final effect, this type of beautification is nevertheless a mutilation.

However, dental mutilations are by no means the strangest. Best known perhaps is the custom of many primitives of piercing

the septum of their noses for reasons of vanity. First a leaf of grass is introduced, to be later replaced by thicker and larger objects, until feather-quills, bones, wooden or metallic objects can be introduced into the hole, to the wearer's joy. Many Australians



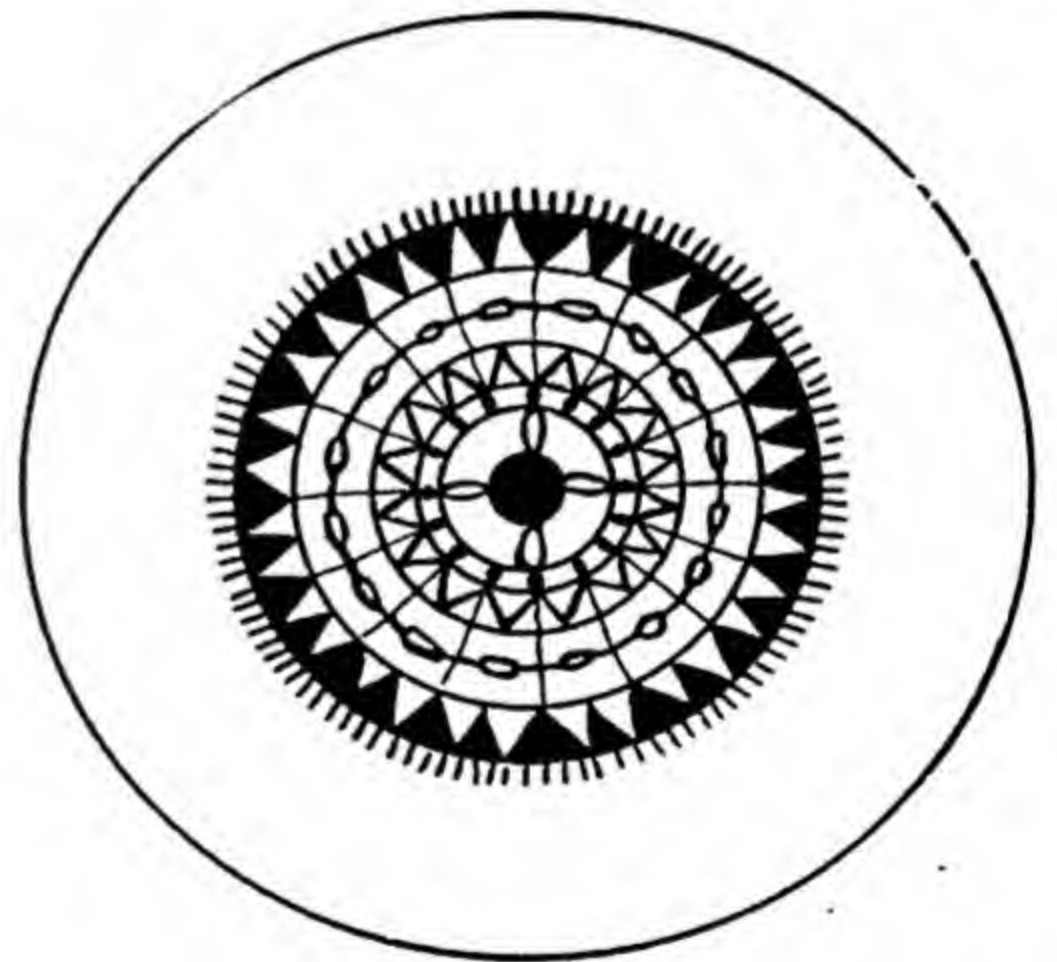
(Left) SHELL ORNAMENT WITH
ENGRAVINGS INFILLED WITH
RED OCHRE

Wyndham, North-west Australia
After F. D. McCarthy

(Below) CHEST ORNAMENT
FOR MEN

Tortoise shell on shell
New Ireland

Museum of Ethnology, Cologne



sport this fashion, but the Polynesian Maori allow such distinction only to their noble families, and make a whole ceremony of the occasion when one of their infants gets its nose pierced, in olden times preferably with the pointed bone of an enemy. The Nor-Papua pierce, in addition to the septum of the nose, its right side and fill the holes with fancy decorations. This custom has been copied in the Hindu high culture, although golden rings decorated with jewels have replaced the old islanders' pig's teeth and bamboo sticks. The Papua of Murik go even further: they pierce their

ears also and like to punctuate their eyes with a small sharp stick, 'painting' a circle of black dots around the iris.

Among the strangest types of allure are the wooden or ivory disks worn in the pierced upper or lower lips or in both, and also often in the drawn-out holes of the ear-lobes. The Alaskan Indians sport such wooden disks or *labrets* in the centre of their lower lips. This custom has surpassed any imagination in West Africa, especially in the region of Lake Chad, where the wooden disks worn in feminine lips reach the size of saucers. (No wonder the art of kissing is unknown to these fashionable ladies!) Ear piercings can also end in horrifying deformations, with the rubberband-like lobes being dragged down by heavy wooden logs. Our modern ear ornaments bear just a faint resemblance to this stage of their former development.

The pink to purple nail enamels of our modern ladies are no sign of modern sophistication. Many children of nature file their nails on rocks and pieces of slate and colour them afterwards in lavish shades of red. Prehistoric mummies in the British Museum still show this mark of vanity, which later was so highly perfected in China and Egypt.

But what would all these beautifications of the body itself mean if their general effect were not enhanced by the multitude of necklaces, bracelets, arm-rings, and feather crests which men and women have added to their other accessories of physical allure! From the modest sinew with its bird-bone 'beads' and shells, as worn by the Selk'nam of Tierra del Fuego, the cockatoo crests and paradise-birds' tails in the hair of the Polynesians, and the heavy brass shields and collars of the African tribes, what wealth of never-ending ideas we find to make nature serve man's (and woman's!) vanity!

There is hardly anything in nature which has not been made use of to decorate the human body and to demonstrate the taste and the wealth of its bearer. Boar's fangs, bat's teeth, egg-shell disks, snake bones, snails, berry clusters, seed ornaments, toucan beaks, ivory-tusk fragments, tortoise-shell pendants, forged rings of iron, silver, and gold, are just a few examples. But here, again, the choice of ornaments and materials gives away the religious and magic affiliations of their owner: among the moon-worshipping mother-right peoples we will find characteristic oval crescents of mother-of-pearl, tortoise-shell, and metals, which symbolize the shape of the nocturnal light—forms that still play so dominating a rôle in the Mohammedan world—while the disciples of the sun, the roaming father-right peoples, prefer the circular disk, which they

display in magnificent variations of exquisitely inlaid or carved specimens.

Boundless as this wealth of materials is, certain singular materials among them enjoy a special world-wide popularity. Among them is the cowrie shell, which has monetary value as well. It is worn on arms and necks and in coiffures from Australia to the innermost



PREHISTORIC NECKLACE

Snail-shells

From the cave Cro-Magnon

Département Dordogne



STONE AGE NECKLACE OF ENGRAVED
PEBBLES

parts of Africa. A close second place is occupied by the tiny disks stencilled out from many varieties of sea shells (in Oceania) or ostrich-eggs (in Africa). Colourful glass beads have penetrated the dark continent to such an extent since the Middle Ages that they have actually become a 'native' accessory. Large-size carved images and chieftain's chairs are in vogue in West Africa, where their finely carved details are at times completely covered with the glamorous beads. Later, also, the Indians took to them quickly, but developed very definite preferences which changed with the waves of fashion. Many a white man who tried to offer the last decade's fashionable blue beads found out to his chagrin that, for instance, no well-groomed lady next to the Xingu was now willing to accept anything but red beads !

Some tribes, as the south-eastern Californian Kamia, reserved certain species of shells for the men while their women claimed exclusively for themselves the necklaces of beautiful 'blue beads' stencilled out of their own favourite clam. The Australian aborigines have two specified preferences: the baler-shell (*Melo diadema*) ornaments of Queensland, western Central Australia, and north-eastern South Australia, and the pearl-shell (*Meleagrina maxima*) ornaments, worn almost exclusively in the western half of the continent. These decorations are often engraved with delicate ornamentations and worn as large disks on the chest. They can have magic powers, and are effective in the hands of a rejected lover to make a girl's "internal organs shake with emotion," as Spencer and Gillen put it.



ANCIENT NOSE ORNAMENT
(GOLD)

Chimu, Peru

After Antze

The masterpieces turned out by the African metal craftsmen reach extraordinary sizes. Even the heaviest pieces, of which often scores are worn, can compete in workmanship with the daintier specimens, as, for instance, the goat's-hair bracelets covered with copper wire. The closer we approach the high cultures, the more precious materials in our sense of the word do we find in the products of exotic jewellery. Among them is the *akori*, the 'blue coral' of Benin, where ancient bronze plates show men so covered with bracelets and necklaces that their mouths were hardly left free for breathing. From old Peru come the 'green pearls' of Chrysocoll and the beautiful sodalith stones gained in the pre-Inca mines of Cerro Sapo. Pure gold was the material used by the African Ashanti as weighting units for the precious dust itself; and the vanished gold coins of the Old and the New Worlds can to-day be found in surprising quantities in the heavy necklaces of the North African desert girls. The invaders of Peru found households full of gadgets for daily use fashioned in pure gold. All this magnificence is worn either on the naked or the clothed body of man, since decorative possessions are as old as and, indeed, frequently older than the clothing. The decisive factor here was the climate.

The Western garb of trousers, vest, and jacket has its origin in the garments of the arctic peoples. For instance, the oldest clothes of some Australian tribes and of the Fuegians consisted of loosely worn fur coats and bast-like bark strings and girdles. To the game-trapping Indians of Labrador a mink coat (in New York the mark of social superiority) is by no means fashionable; a Hudson's Bay Company 'point' blanket is *the* thing—which is another demonstration of the relativity of fashion.



WOMAN'S COSTUME
North-eastern tribes,
Lake Leopold II,
Belgian Congo
After Maes

The characteristic items of attire of later developments are the penis case of bark or leaves, often trimmed with feathers, and the flexible belt of bark or raffia. Skirt-like aprons of fibre and spiral-like girdles and raincoats of pandanus leaves are other forms of fashion, but all these manifold forms of clothing or unclothing, including the varying foot-gear of the ages, are not so much accessories of allure as protective necessities. An exception, perhaps, is the earliest form of a very modern accessory of modern allure, the brassière, whose first appearance was as a string used to bind down the developed breasts of grown-up girls. When Father Schulien insisted on an explanation of this custom he was told by the Portuguese East African Atchwabo: "Sir, the breasts vibrate. When the men see this they burn." Many African tribes sport this coquettish string, which is sometimes replaced by a piece of cloth, "to prevent the breasts from moving up and down while the girls are walking."

As long as everybody wears about the same outfit one can hardly count the daily garb among the accessories of allure. Only when clothing gains a more individual touch by a greater accessibility of materials, by the development of painted, printed, and woven patterns, and the invention of the button, and other 'unnecessary' trimmings, can we speak of alluring dress. Because true allure is an expression of individual taste.

Another more refined touch comes with the appreciation of perfumes, hardly found in earliest times because most flowers of the tropics have no scent and the secrets of chemistry were not known to the peoples without written history.

The finer gadgets and tools of vanity, the secret boxes, containers, and flasks of the dressing-table, can be traced back to earliest times. Tiny jars for lip rouge, fashioned of bone segments, are known from palæolithic times ; so are mixing-bowls and pestles for the make-up. Small platters for the application of grease paint to the skin, even in the shape of a human hand with outstretched fingers, are equally old and have later been copied in the luxurious materials of ancient Egypt. Richly ornamented slate palettes, bone flasks, and covered 'cold cream' containers were found in ice-age caves ; and the elaborate inros of Japan are merely the jewel-studded imitations of such flasks. The earliest form of the mirror is the polished shell or metal disk ; the latter's luxurious perfection in the precious metals of Egypt, China, Byzantium, and Greece can be admired in the museums of the world.

The degree of luxury reached during the pre-Christian epochs in the countries of the ancient high cultures has never been equalled or surpassed by the machine-made accessories of allure of our days. Whoever has seen the necklaces of Egypt and of Ur (about 2500 B.C.) in the British Museum will agree with this statement. We all know the perfection of grooming and of sophisticated attractiveness attained by Cleopatra, by the *Arbiter elegantorum* of Rome, and by the Incas of Peru. The Empress Theodora of Byzantium was, as far as grooming is concerned, a living piece of art, from the gold-dust in her bluish hair and the Arabian *stimmi* on her brows to her rosy toes. Her pillows of Chinese silk were filled with the down of the Pontian crane : hundreds of flasks and gadgets covered her vanity table of citrus wood ; her soap came from Spain, and her bath-tub was made of terebinthian wood.

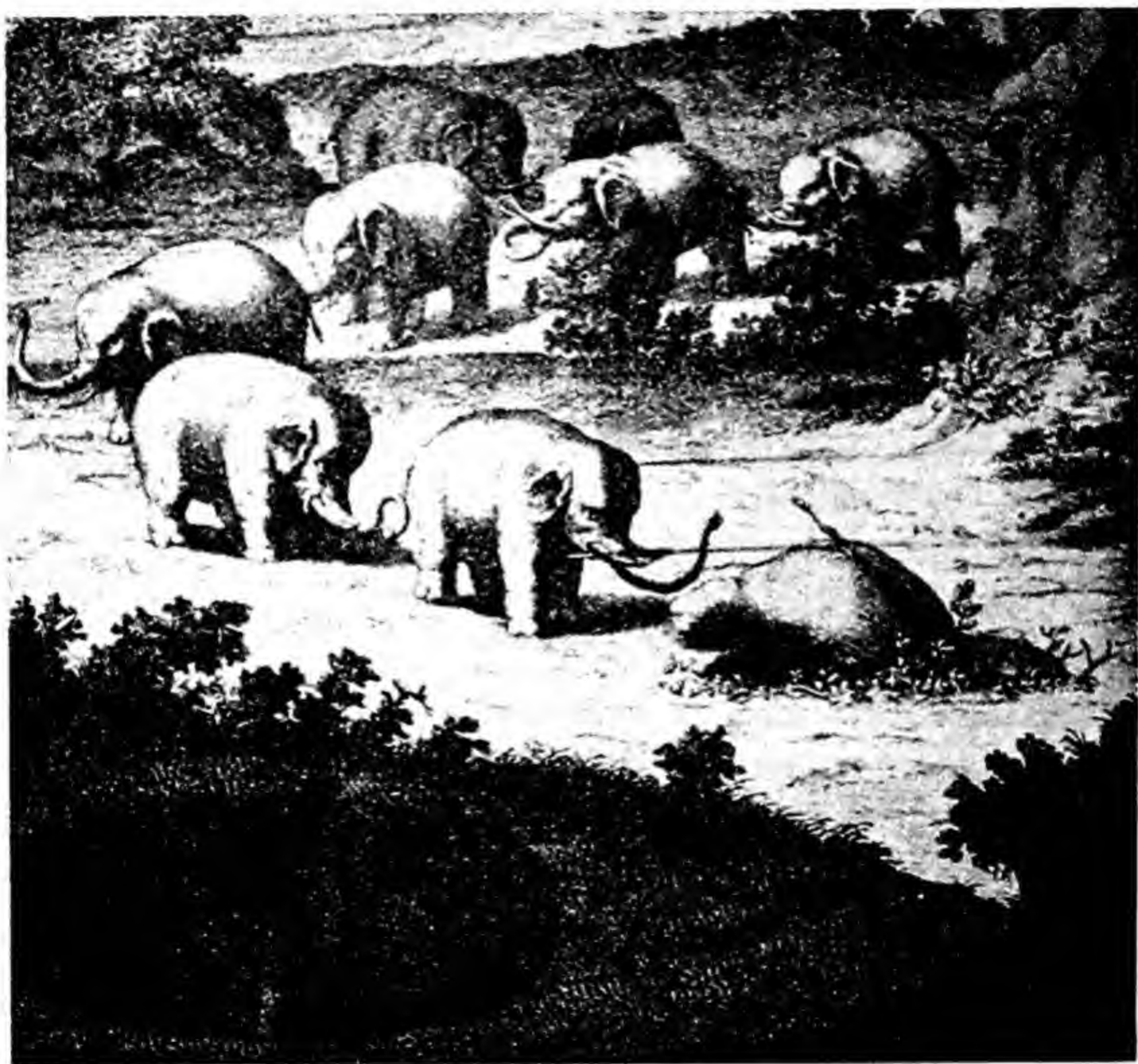
To equal such refinement, our epoch has neither the leisure nor the wealth. Another, more puritan, conception has been given to Western man since the comparatively recent words in the book of Leviticus (xix, 28) were spoken : " Ye shall not make any cuttings in your flesh for the dead, nor print any marks upon you : I am the Lord."

Yet those who do not know of the 'wizardries' of the written and the printed word have not heard this message, and for this reason the men and women we call primitive still go on enjoying the colours and the jewellery God provided for them in His free realm of nature, and they still do their best to enhance the natural charms of their bodies with the help of skills unforgotten through the millenniums.

CHAPTER THREE

The First Robot

HARD THOUGH LIFE is in the wilderness, early man nevertheless could draw on the intellectual resources denied to his lesser brethren, the members of the animal kingdom. Working with the simplest of gadgets, he began to nurse a dream : to find a medium—



PITFALL FOR ELEPHANTS

Hottentots

After Peter Kolb

human, magical, or otherwise—to help him to carry the burden of daily toil. If he were fortunate enough to remove the cork from the bottle of ingenuity, if he could rub the magic lamp of creativeness, a jinnee might arise whose powers he could put to service. But, alas, his was not the world of *The Arabian Nights* ; and if he were ever to find a magic helper it would have to be created out of his own mind and built with his own hands. This servant would be a machine—indeed, the first machine, the first robot.

How great was his need for such a miraculous device ! Especially was this true for peoples not yet acquainted with the comparative security that comes with the knowledge of agriculture. The arduous task of hunting and food gathering often limits man's desire to exercise his individual creativeness. It takes long hours to spot a nest of wild bees high up in some far-away tree and to make the necessary preparations to obtain the honey ; to trail and kill the bird on the wing ; to lurk in the bush for some shy game to pass by ; or to watch the fish for the chance to spear them at a second's warning. All such efforts require a great amount of patience on the part of the hunter. Days may pass before an animal approaches close enough to be bagged. Many a family cannot easily stand the strain of waiting too long for provisions in a society where the foresight to store staple foods in time of plenty is not yet developed, or where that ' time of plenty ' may never come.

The ingenuity of man tried to overcome these hardships. Better undoubtedly than the club or the stone as hunting tools were the arrow, the harpoon, the lasso, the bola, the butterfly-net, and the hand-thrown snare. True, these all still required the hunter's constant presence and alertness, but they either augmented the power of his bare hands or held the game securely until the hunter could reach it. Some tools enabled the hunter to capture more than one bird or animal at a time—for instance, when he used the game net and counted on the co-operation of his fellow-hunters to drive many prey into its entangling meshes. From the times of the Pharaoh Haremheb up to our day quail and other birds have been hunted by this method of spreading out over a field a weighted net into which the game birds are driven by helpers. This method is used to-day by the Dayaks of Borneo who catch deer with a set of perpendicularly arranged nets ; by the East African Washamba who catch antelope and gazelles ; and by the Eskimos of Bering Strait who bag rabbits. They are first driven into nets and then killed by hand. Compared with earlier methods, these were improvements, but the continuous presence of the hunter was still the invariable prerequisite to success.

Similar methods include obstructing the flight of a flock of birds by nets. Following this method, the Siberians hunt geese, while the Eskimos along the Yukon catch the white partridge with their salmon nets. The battue principle applies a somewhat different method. Thus, it was common among the North American prairie tribes to hunt the buffalo by driving the herds along two converging fences over a bluff. Certain primitive methods of bird-catching have become part of our own hunting customs. The prey

is attracted either by whistling or by decoys from behind a blind. Then the hunter releases by hand a mechanism for capturing it ; finally he imprisons the bird in a container, cage, or net.

While the possibilities of a successful hunt were increased by all such devices, the main problem had not yet been solved—to achieve equal results without the continuous presence of the hunter at or near the catching spot. If the waiting, the handling, and releasing of the weapon or catching tool, and the holding or killing of the game could be replaced by mechanical devices a real step towards a greater amount of personal freedom for the hunter would indeed have been achieved. The invention of such a device would enable him to stay at home while his hunting was being taken care of, and to exploit several game tracks simultaneously. In the time thus gained he would be able to pursue other useful trades and handicrafts, or he could play and dance and sing and have a good time. Perhaps it really was complacency and laziness that inspired the first primitive genius to invent such devices. We don't know for sure, but the very sounds of the words 'work,' '*travail*,' '*Arbeit*,' and the '*Aïyxhem !*' of the Volga boatmen have so hollow a ring that they all seem to express the depression of hard-labouring men everywhere.

The day came when this first revolutionary invention was actually made ; when man for the first time built a machine which worked for him during his absence ; when human intelligence created a robot to take his place with mechanical precision. This miraculous tool was the animal-trap.

It worked like the net, the club, the hand-thrown snare, only more precisely and effectively. In addition, its capacities were greater than the much weaker efforts of the human hand which it replaced. By the application of lever principles attached to the delicate release mechanisms, the slightest touch would set into motion the weight of considerable, even tremendous powers, skilfully matched to the game animal's strength. Primitive man certainly had no text-book knowledge of the principles of physics and was ignorant of the causes of mechanical phenomena, but he was, nevertheless, shrewd enough as an observer to imitate by mechanical means what he had seen in nature. The living branch, jerking back to its natural position after an accidental dislocation ; the weight of dead trees thundering down the hill after a hurricane ; the hazards created by a branch-covered hole in the ground—these and others were early man's physics teachers, and he made skilful use of what he had learned from them. After he saw that his devices worked he did not stop with the invention of just one kind

of trap. Combining his mechanical knowledge with his unexcelled knowledge of the peculiarities of climate and of the behaviour of animals in his locality, he succeeded in devising hundreds of different models of traps, all cunningly adapted to the special conditions of his surroundings.

For the effectiveness of his robot he made use of the currents of water ; the slippery quality of ice ; the thirst of a jungle beast trotting along its path to the spring ; the bear's sweet tooth ; the curiosity of the whisky-jack ; the robber instinct of the owl ; the shyness of nocturnal creatures ; and the pride of the lynx who will jump once to get free, but never a second time. Knowing the peculiarities of his prey, he thwarted even their keen sense of smell by destroying all odours of the human hand left on his machine and, as the modern criminal uses his own methods to avoid tell-tale fingerprints, the man of nature covered up his scent by singeing wood, by the use of 'living' twines and glues, and by the scents of nature—resin, blood, or animal scents like *castoreum*. To mislead the eye of the game as well, he added a masterful art of camouflage by building artificial pens around his machine or covering it with branches, and by spreading bunches of dry savannah grass over the deadly pits he had dug in the soil.

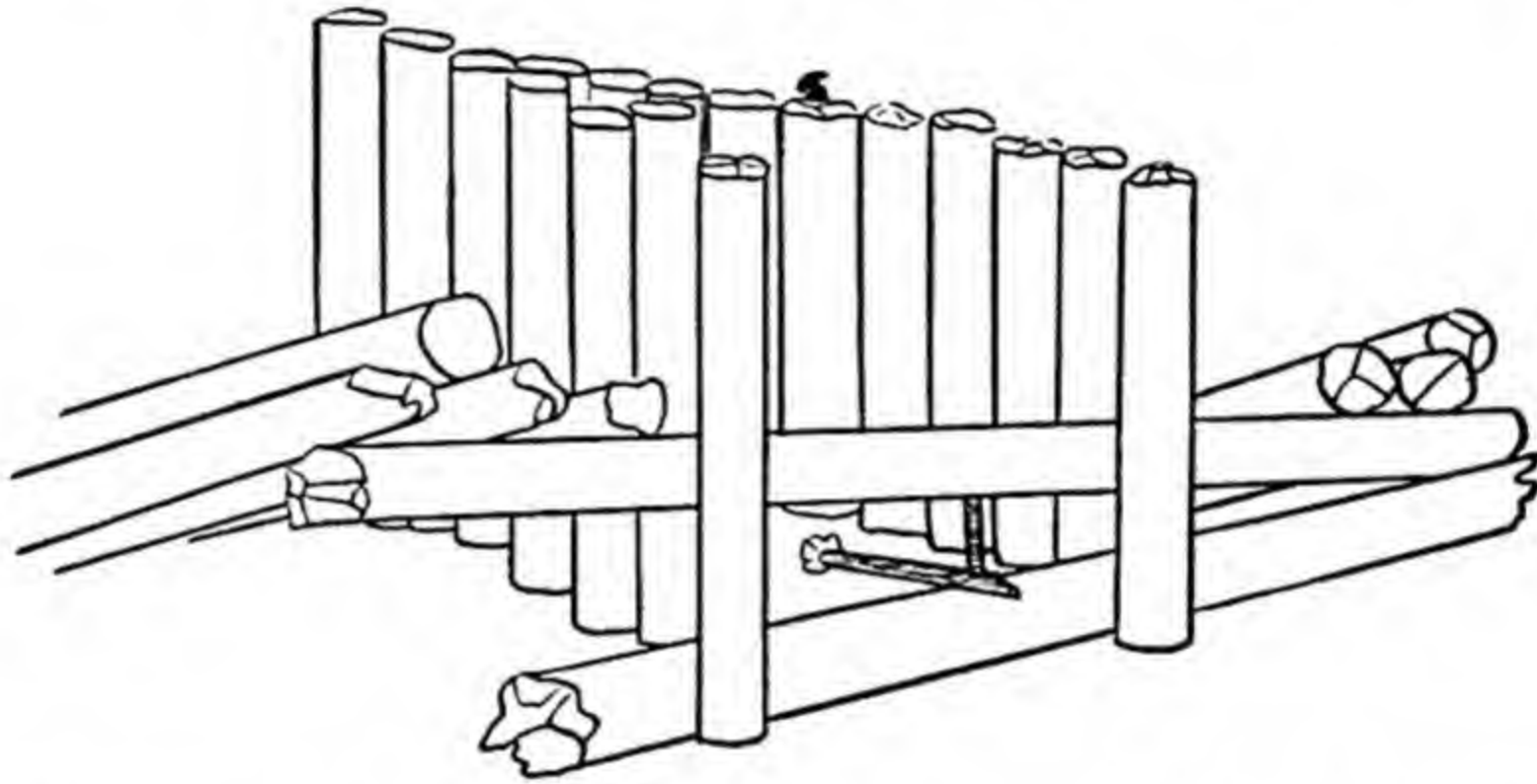


GIRAFFE PITFALL
Kafirs, South Africa
After Wood

The hundreds of traps he invented, in all sizes, from the bamboo tube for mice to the enormous models for giraffes and elephants, have amazed scientists for years. Many museums possess, in the collections brought back by their explorers, traps or parts of traps which can be neither properly identified nor assembled. It takes a specialized knowledge to reconstruct these machines, and often this can only be done after a previous thorough study of the tribe, climate, and fauna concerned.

Varied as the applied physical principles are, all machines that hold or kill the game animal without the presence of the hunter can be classified in four major groups according to the motive principle used. The recognition of these groups furnishes one of the most fascinating insights into the great intelligence displayed by early man in his efforts to improve his standards of living. These four principal types of trap occur in all imaginable versions and varieties ; often one or more of them are combined for the sake of greater effectiveness.

The GRAVITY TRAP, as its name implies, makes use of weight to achieve the desired effect of catching a special animal—either the weight of the animal itself, or the power of the one or more falling objects so arranged that they hit the victim after the release of the mechanism. The only existing gravity trap of the first kind, using an animal's own weight to bring about the capture, is the pit trap. Generally it merely consists of a deep hole dug in the middle of an animal track, its opening carefully camouflaged by branches, moss, leaves, and the like. The prey steps unsuspectingly upon this covering which gives way, thus catching the victim in the narrow excavation whose dimensions correspond exactly to its size. To



GRAVITY TRAP FOR BEARS, WOLVES, AND OTTERS

Tahltan Indians, North America

After Emmons

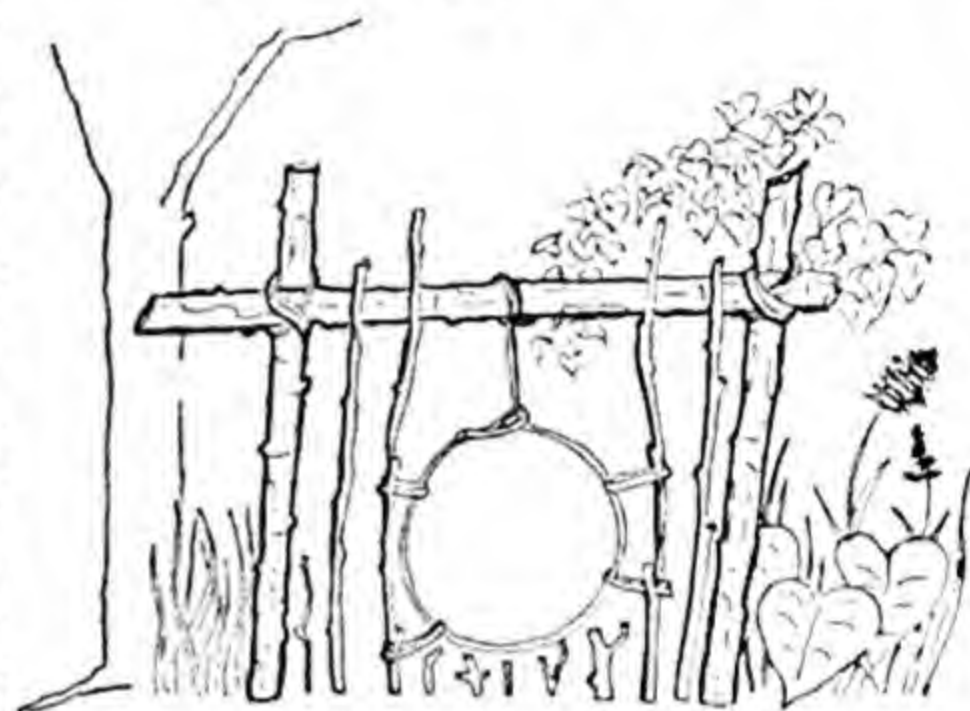
prevent escape, several methods are used. The possibility of the animal jumping or climbing out of the hole is eliminated by sufficient depth of the hole, or by its conic shape, into which the animal is wedged by its own weight.

The Bushmen catch the giraffe by dividing the bottom of the pit into two sections, leaving a central ridge of soil. The trapped animal rides helplessly on the ridge, unable to lift its long legs from the trap. To increase the effectiveness of the pitfall, pointed sticks are occasionally rammed into the bottom of the hole to pierce or wound the animal. This type of trap is not only used singly, but also several may be arranged at regular intervals along a fence or in great numbers on game paths leading to the watering-place. Frequently converging hedgerows of considerable length make an alley to the pits.

This very effective method was, as we may recall, often copied by the white man during the Second World War when 'the animal's

own weight' was the weight of our modern dinosaurian, the tank, which plunged into similarly camouflaged pits.

The second type of gravity trap uses a log, or a combination of other heavy objects, released by the animal itself to effect its capture or to kill it. As a result of primitive man's experience that falling logs create a force which increases in proportion to the height of their fall, this height is artificially increased to the greatest limit of effectiveness. The simplest example of such a trap is a heavy stone held in equilibrium by a small stick which holds the bait and acts as a release mechanism. Pulling at the lure, the animal causes the stone to fall down upon it. However, this type of release is ineffective whenever the weight to be released is too heavy, because then the animal can nibble on the bait without actually releasing the trap. The solution was found by adding a system of force-reducing levers and by developing a trigger device. Such traps are used all over the world, especially by the peoples of the arctic cultures. Increasingly heavier objects were heaped on the striking beam which, in turn, required more and more delicate construction of the release mechanism. The result was astounding. The Montagnais-Naskapi build bear traps weighted by four or five heavy logs which are sprung by the mere touch of the victim's inquisitive nose.



SNARE TRAP

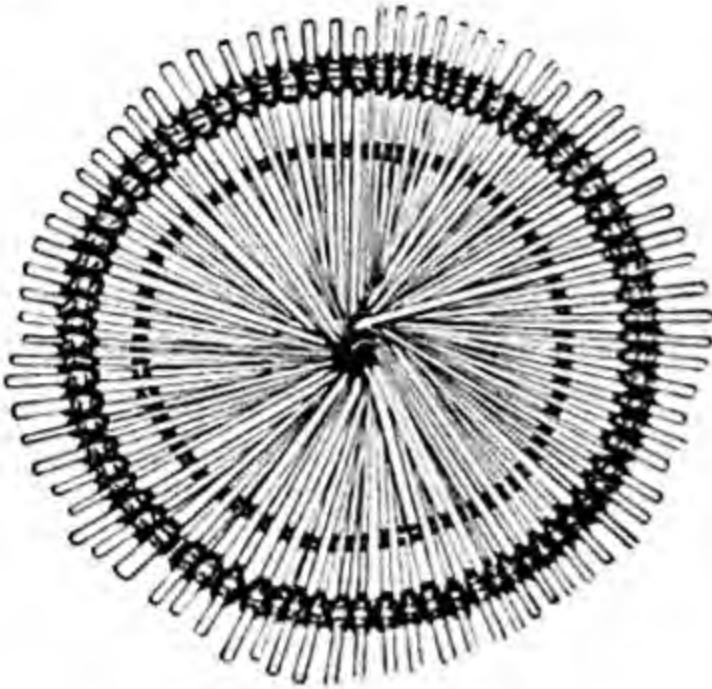
Labrador Indians

After Lips

Having perfected the gravity trap, the primitive hunter applied other laws of nature. Observing animals occasionally strangling themselves in the liana thicket of the primeval forest, early man evolved the SNARE TRAP. Utilizing the forward movement of the animal, he sets this device mostly on a vertical plane. Since the most sensitive part of the bodies of most game animals is the region of the neck, snares are set on a game path in such a way that the head of the prey enters the noose, which tightens like a lasso. To keep and to hold the snare open, a number of secondary appliances are needed. Here, too, combinations of fences are often used with the snares set at the openings.

An apparatus still in use in many parts of the Old World is the wheel trap, based upon the snare principle. To build it, a number of pointed flexible sticks are inserted from the outside into a wreath

of fibres in such a way that their points join each other at the centre. Attached to a tree or pole, this trap is laid in the game path, most often over a small pit. When the victim steps on it the flexible spikes give way to its foot, inserting themselves, when the animal tries to escape, into its tender fetlock. The greater its efforts to get free, the more severe is the pain, since the pointed sticks penetrate ever deeper into the flesh. An additional snare is sometimes laid round this spiked-wheel trap to close as soon as the animal tries to escape.



SPIKED-WHEEL TRAP

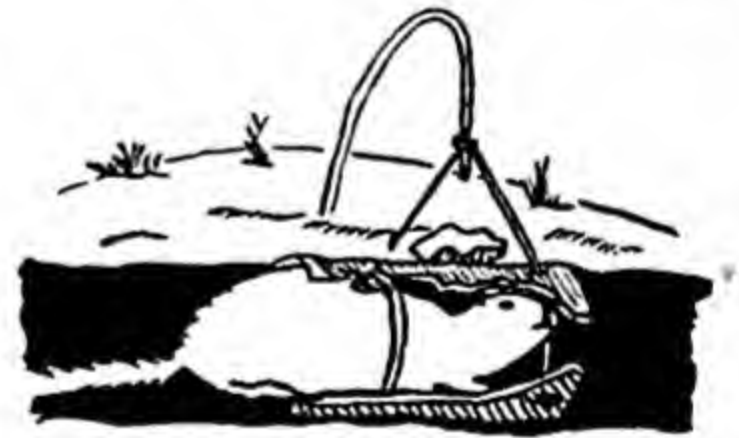
Maka, Cameroons,
West Africa

After G. Lindblom

The third principal trap system, the SPRINGING-POLE TRAP, is still in daily use among many peoples of Africa, Asia and America. It is based on the power principle of the inertia of a flexible stick. The material used as a spring is a bent tree or a branch which naturally seeks to regain its equilibrium. This, however, requires that the tree or branch be firmly connected to some arrangement by which the motive power can be utilized. This, in the case of the spring-pole trap, is usually a snare.

This type of trap is generally used by agricultural peoples, who use it to catch smaller animals as a supplementary addition to their diet. Their more sedentary way of life gives them the leisure to build this kind of trap and refine its release mechanisms in numerous variations. Any engineer who concerns himself with the problems of kinematics or the mechanism of driving gears will recognize the arrangement of these release constructions as the oldest application of relay structures which occupy a paramount place in modern technique.

The application of the springing-pole trap with its pull principle is not limited to animal traps alone; the inertia of the bent rod serves many other purposes. In the Middle Congo springing poles are used for the execution of slaves and prisoners of war, whose heads are snapped off by the force of the blow. The modern gallows used for executions are by no means authentic springing-pole traps. They are not traps at all. Requiring the presence of the executioner, the gallows is merely a 'trap-like catching

SPRINGING-POLE TRAP
FOR MARMOTS

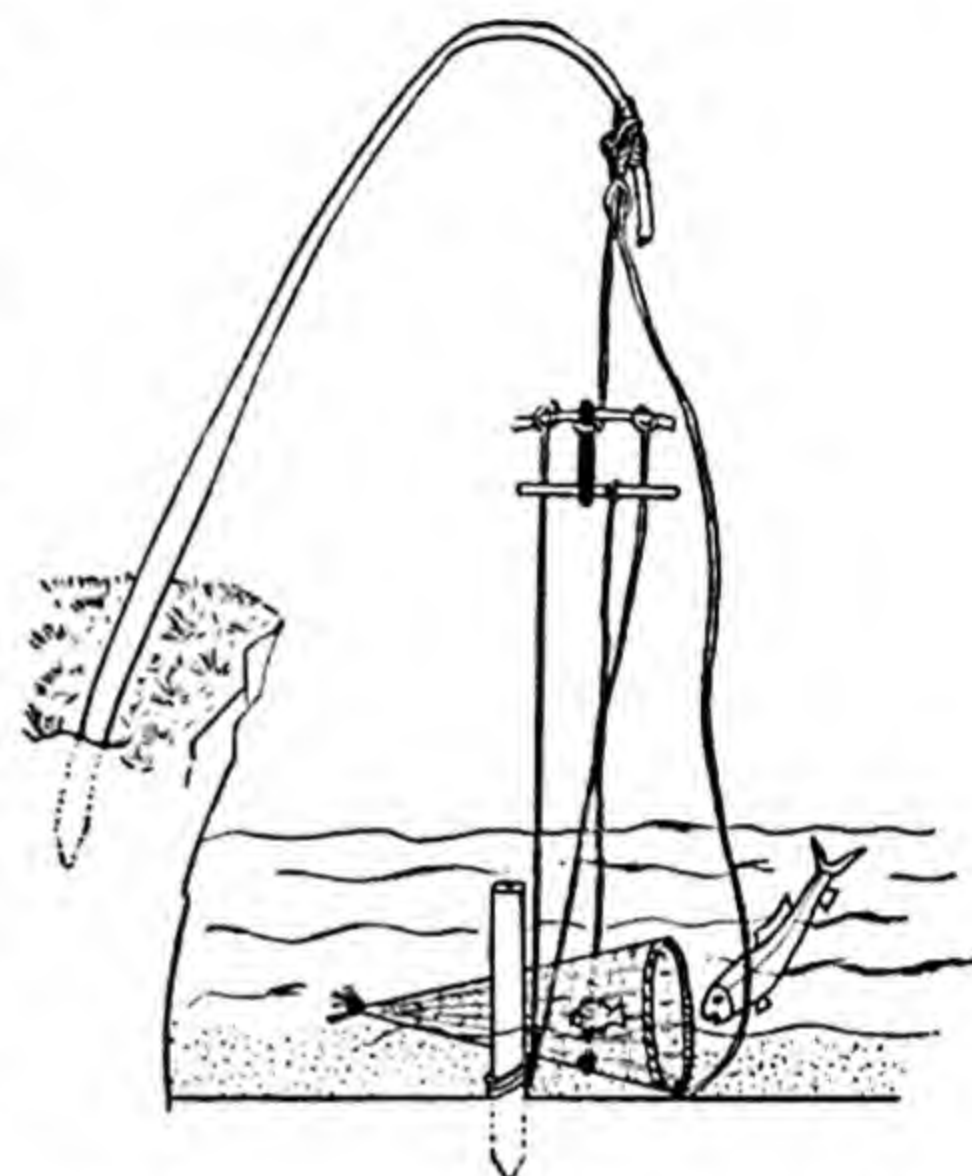
Eskimo

After E. W. Nelson

method.' The natives of Borneo and Hindustan set the bellows of their iron-melting furnaces in action with the help of springing poles. A similar utilization is found on northern European farmers' stoves, and in Eastern Asia they furnish the power for native weaving looms. Occasionally the spring-pole trap is used for fishing, with a hook or a fish-pot taking the place of the snare.

Other forms of the springing-pole trap principle have helped primitive man in his war efforts and in his peace-time entertainment,

because the springing-pole trap is the forerunner of both the shooting bow and the cross-bow, as well as of the violin bow and all stringed instruments. Primitive man transformed the springing-pole trap into a music bow by mounting it on a sound-board such as an empty pumpkin shell. By the addition of a number of such musical bows, he created the first stringed instruments, the forerunners of our modern violins, 'cellos, etc. Both the shooting bow and the cross-bow, as weapons, have their origin in the springing-pole trap; we can trace back the latter to China of the twelfth century B.C.



SPRINGING-POLE TRAP WITH
FISH-POT

Bangongo, West Africa

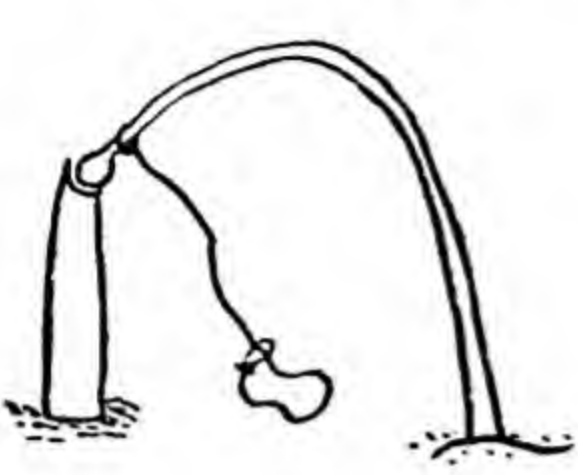
After Torday-Joyce

The revolutionizing influence of the cross-bow weapon in the wars of antiquity is familiar to all students of history. It is possibly no overstatement to say that the might of the Roman Empire would have been impossible without the ancient cross-bow, based upon principles first developed by primitive man in his construction of animal traps.

The TORSION TRAP, finally, is based upon another widely applied power principle. Man had observed that a twisted elastic string tends to regain its original form and, if prevented from doing so, generates considerable power. The force of torsion was applied to sinews, roots, or fibres. By attaching to these a leverage device the torsional force was effectively directed. A frame, often combined with a net, caught the animal; or a wooden board was forced downwards on the victim. All torsion traps are designed for close action, since success is possible only in its immediate vicinity.

This kind of trap had its origin in the high-culture regions of

RELEASE MECHANISMS OF SPRINGING-POLE TRAPS



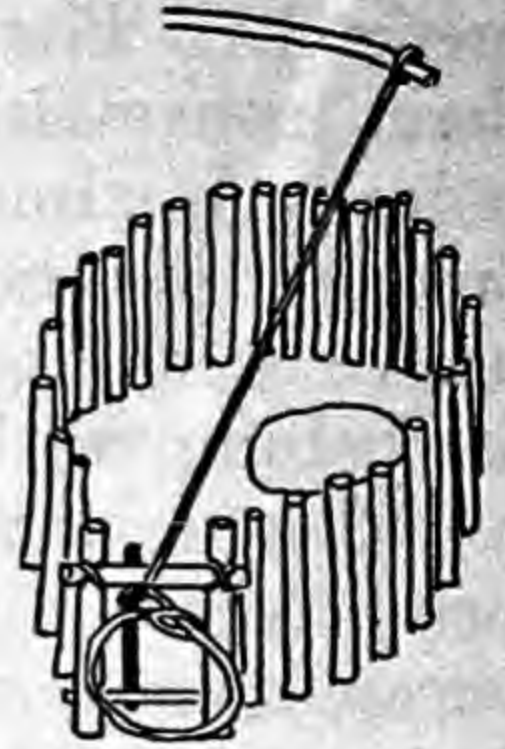
Winnebago,
North America



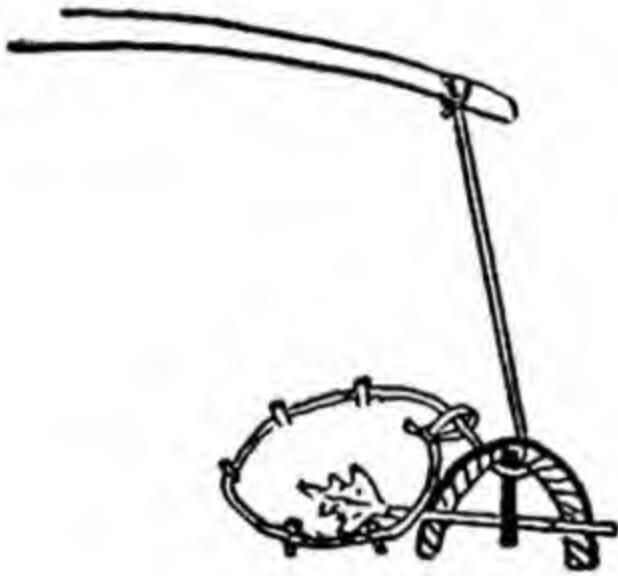
Kwakiutl,
North America



Makusi,
Guiana,
South America



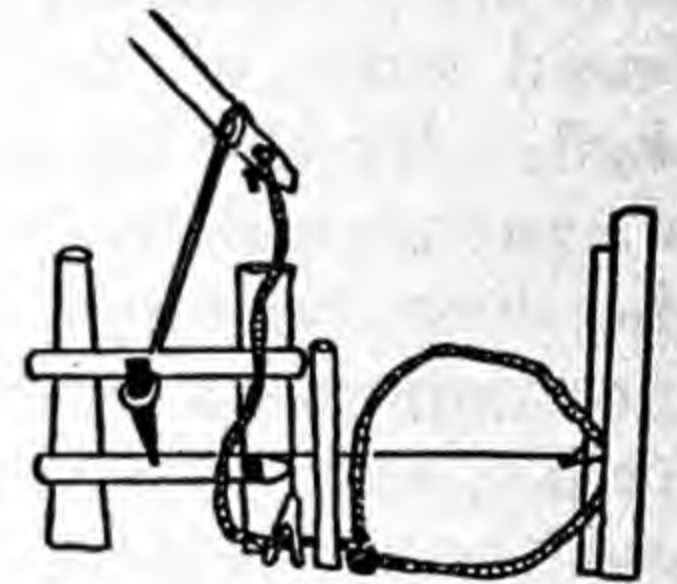
Pomeroun
River,
Guiana,
South America



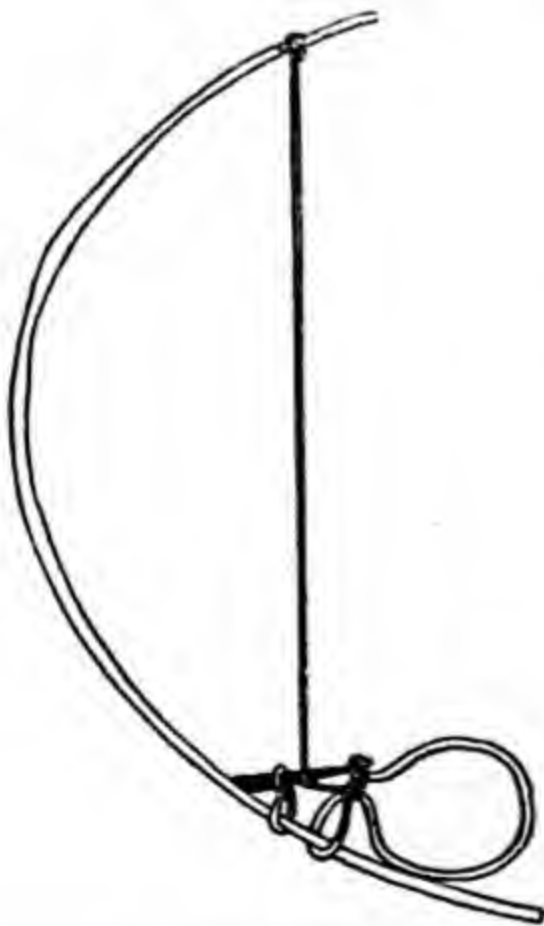
Bushongo,
West Africa



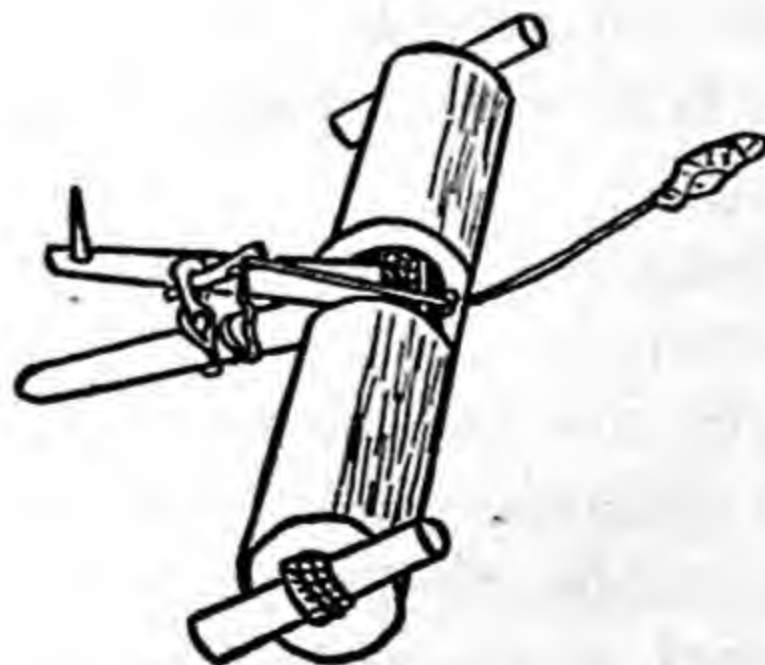
Arawak,
Guiana,
South America



Pangwe,
West Africa



ONE-PIECE SPRINGING-POLE
TRAP FOR RATS
Jaunde, West Africa
After G. Tessmann



TORSION TRAP FOR
WOLVES AND FOXES
Eskimo, Norton Sound
After Lips

Asia and Africa, being later more widely diffused. Wherever it is in use among primitive tribes like the Eskimo and Chukchee, it has been secondarily adopted and is not a result of their own invention. The entire construction of these traps is similar to our modern steel traps, even though the materials used are different. All steel traps in modern stores, from the simple mouse-trap to the huge traps that are used for capturing the largest animals, are simply torsion traps which vary only in their construction material from those used by their original inventors.

The Greeks adopted the torsion principle from the Orient. It reached a high degree of perfection in the gigantic Roman throwing machines (*euthytors*, *catapults*, *onagers*, *tollenos*). The necessary bows consisted of twined sinews, a material even to-day used for the wolf and fox traps of the Norton Sound Eskimos. The ballistic machines of ancient times were so effective that some European museums put theirs at the disposal of their governments during the First World War, and they were actually used for the throwing of mines.

The animal trap invented by primitive man has opened so many roads to modern technological development that no one who has followed the development of this first robot will deny its overwhelming importance. The invention of the first animal trap was certainly of greater consequence to the history of mankind than the invention of the wheel. The application of the newly found motive powers in building the animal traps had greater consequences than any other single invention in the technological history of mankind.

When was it that early man began to subdue the forces of nature to make them work at his command? It must have been tens of thousands of years ago that the genius of early man invented traps. There is no people on this earth that does not know of one or the other principle for making traps; even the anthropologically oldest cultures know them. Prehistoric facts are equally conclusive, and sometimes offer us the possibility of dating the different kinds of trap devices.

In the region of the Garonne River of Southern France (especially in Dordogne), and across the Pyrenees, in the Basque country of Biscaya, certain prehistoric caverns have been discovered which have been identified beyond any doubt as the human abodes and places of worship occupied during the Later Palæolithic period of Europe. There have been found in these caverns strange examples of the art of early man, especially certain unusual drawings of animals like buffaloes and mammoths. Beautifully preserved in their

glowing red and yellow-ochre colours through the millenniums, these pictures offer a strange sight because the animal portraits, drawn in very naturalistic style, are always combined with mysterious geometric symbols which sometimes were even painted on the animals themselves. A peculiar feature of these representations is the fact that these animal portraits in their combination with the geometrical signs did not appear close to the cave entrances, but rather, were always found far back in their interior, removed from daylight and visible only by means of artificial lighting. The hidden locations of these paintings makes it obvious that they were not meant to serve as an art gallery of the ice age. Just what their purpose was mystified scholars for some time.

In the search for an answer, scientists made use of certain facts. First, it was known that the chief form of economy during the Glacial period was that of hunting and that, therefore, the animal was pre-eminent in early man's mind. Secondly, the hunting habits of such primitive tribes as the arctic peoples, the Bushmen, and the Australian aborigines who, though living to-day, are still on the same cultural and economic level as the Ice Age man, provide clues to and suggest possible explanations of the mysterious cave paintings.

Even to-day, African Bushmen as well as Australian natives get together on the evening before a hunt and perform magical dances and rites to safeguard its success. A witch doctor is their song and show leader. The likeness of the game to be hunted, be it kangaroo or antelope, is either drawn in the sand or painted with ochre on a rocky wall. The hunters then gather round this image and run their spears through the picture of the animal. Without this procedure, these tribes are firmly convinced, they would be unable to bag animals the following day. In the mind of primitive man there is no differentiation between an object and its image; to him the drawn picture and the animal itself are identical. Accordingly, the drawn and pierced animal has been killed already, and the hunt of the coming day is not much more than a formality.

It is no far-fetched idea, therefore, to interpret the paintings inside the caves of palæolithic man as similar magic hunting rites. This view is further supported by the presence in the caves of other pictures representing dancing witch doctors wearing animal masks, another practice equally frequent among primitive tribes of our time who believe that these images favourably influence the multiplying of the game and give good luck to the hunter.

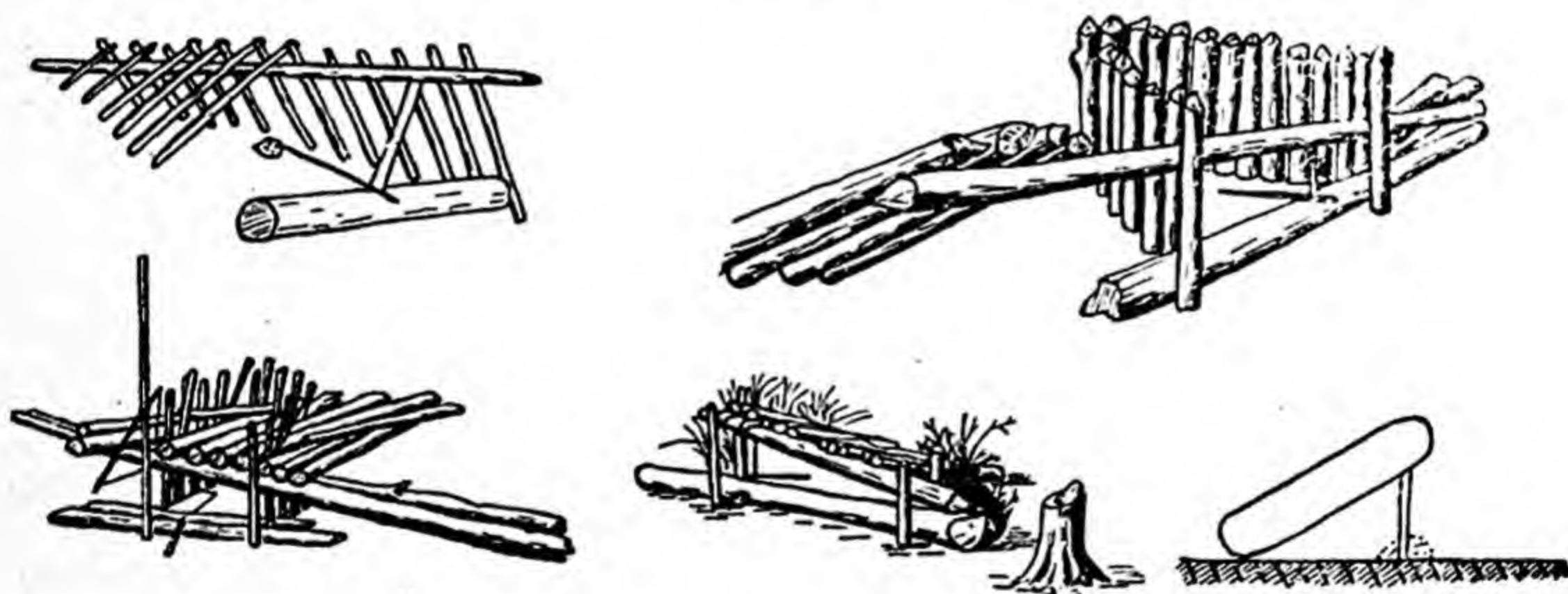
If these same practices were used by the ice-age hunter how

was he able to hunt such mighty animals as the buffalo and mammoth, against which his primitive hunting tools would seem inadequate? This question was solved by modern scientific interpretation: nowadays those mystical symbols, formerly known



GRAVITY TRAPS

Ice Age drawings

After Lips

GRAVITY TRAPS

In use by primitive peoples of to-day

as *signes obscurs*, have found their correct explanation. To-day there is no shadow of a doubt left in international science that they represent outline drawings of animal traps, recorded so realistically tens of millenniums ago by the early inhabitants of Europe in their caverns of Spain and France that even the details of their construction and the variety of their types are known. And we know now that these earliest machines are ten thousand

to twenty thousand years old. The pictures in the caves originated during the third Glacial period and the post-Glacial periods which took place in these regions, as science can prove, during the years from 20,000 to 8000 B.C.



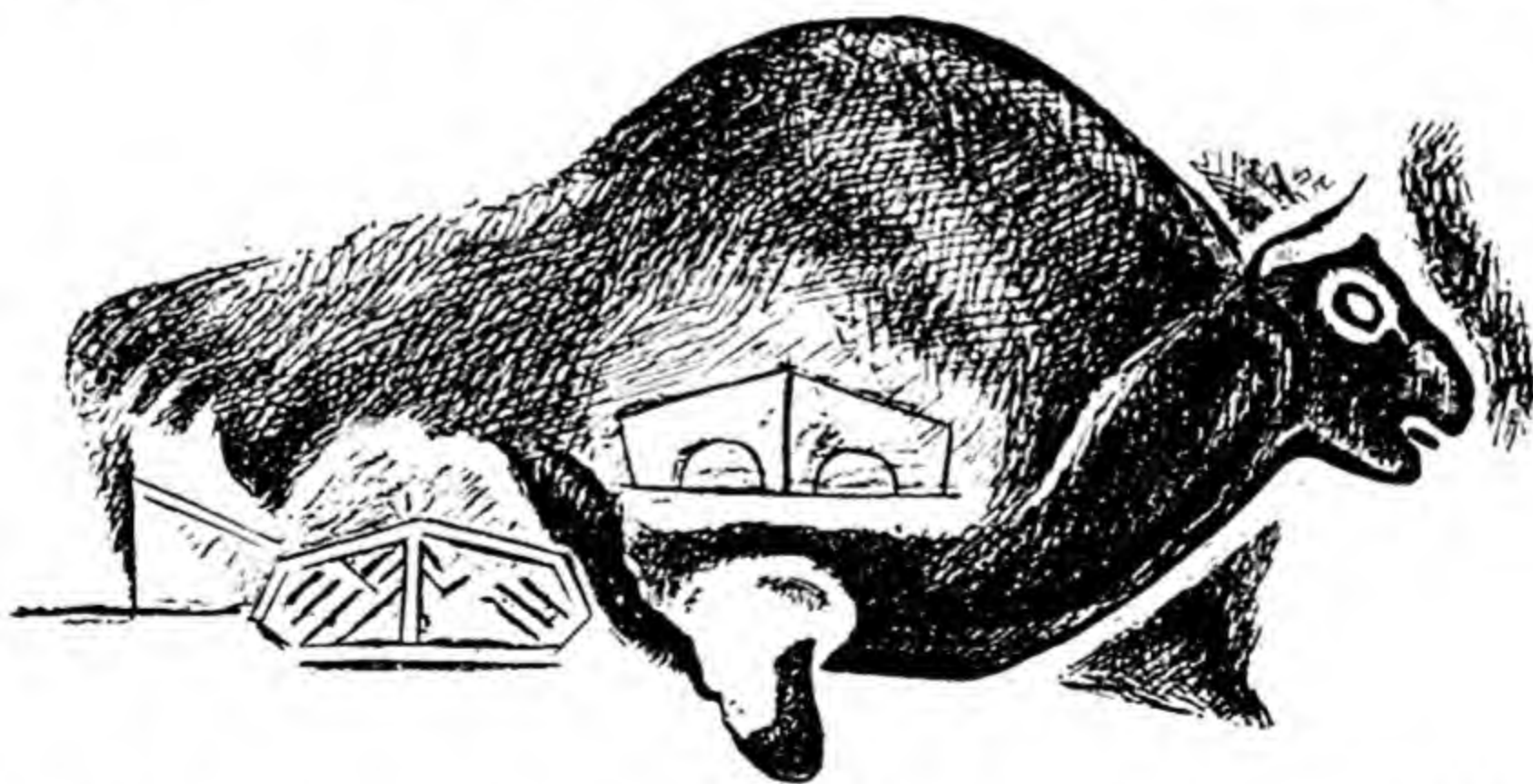
MURALS FROM AN ANCIENT
EGYPTIAN GRAVE, DEPICT-
ING GAZELLES CAUGHT IN
WHEEL TRAP

Hieraconpolis, Egypt
After J. Kapart

hunting devices. We find it clearly depicted in many prehistoric caves and in ancient Egyptian tombs, as for instance on the mural at Hieraconpolis. The Swedish scientist, Lindblom, has traced it

In these ancient drawings we recognize now without difficulty the gravity trap (drawn on the body of a gigantic buffalo in the cavern of Font-de-Gaume) which is in use among to-day's primitive tribes all over the world. With this same model the South African Bushman catches the hyena; the North American Tahltan Indian, the wolf; the Blackfoot Indian, the jackal; the East African native of the Maconde Plateau, the antelope; and the Labrador Indian, the bear.

In terms of world-wide distribution and extraordinary age, the spiked-wheel trap is certainly the most interesting of



ICE AGE DRAWINGS OF GRAVITY TRAPS ON BUFFALO

Cave Font-de-Gaume

After Capitan, Breuil, and Peyrony

through Africa and Asia, in Asia as far as the Karakorum, the Etsingol, and even the Amur. Frobenius published its likeness as shown on the palæolithic rock paintings of Fezzan, and Breuil's pictures from Tabel Bala show its wide use in the Sahara.

Strange as the idea may seem to some one not familiar with the facts of man's first robot, we know now that our utilization of the four main power principles, extensively employed in our modern technology, originated from unknown and unnamed inventors of the Glacial period who lived on this earth tens of millenniums before our time. Long before Archimedes they invented, based upon the application of the laws of leverage, the important relay and release mechanisms whose analogous application in modern machinery can easily be observed by any layman, even if their construction has undergone considerable improvements.

Applying the principles of the gravity trap, the old Egyptians utilized its general possibilities by creating the slot-machine. Heron of Alexandria provides us with the drawing of such a machine for the sale of consecrated water. In it the inserted coin fell upon a 'trap' lever mechanism, thereby opening a flap valve from the faucet of which flowed exactly the amount of water the coin had paid for. To-day, when we receive a sandwich or a postage stamp or a package of chewing gum by inserting a coin in the slot of a slot-machine, we only prove the efficiency of the gravity trap; the coin assumes the rôle of the animal whose weight regulated by the distance of the fall sets the release mechanism into motion. The same principle rules the operation of the slot-machine, the turnstile, and the self-playing gramophone.

Two modern 'traps' without primitive fore-runners are the 'electric-eye' gate whose beam of light, when broken by an approaching person's shadow, automatically opens a door, and the famed 'electronic rat-trap,' which has a similar photo-electric mechanism. Both are real traps, not 'trap-like catching methods,' since they do not require the presence of any human attendant to become effective. In both cases, the newly added touch is derived from the electronic wizardry of the twentieth century, but the old robot idea of exercising power even in the absence of man himself is as old as the ice age.



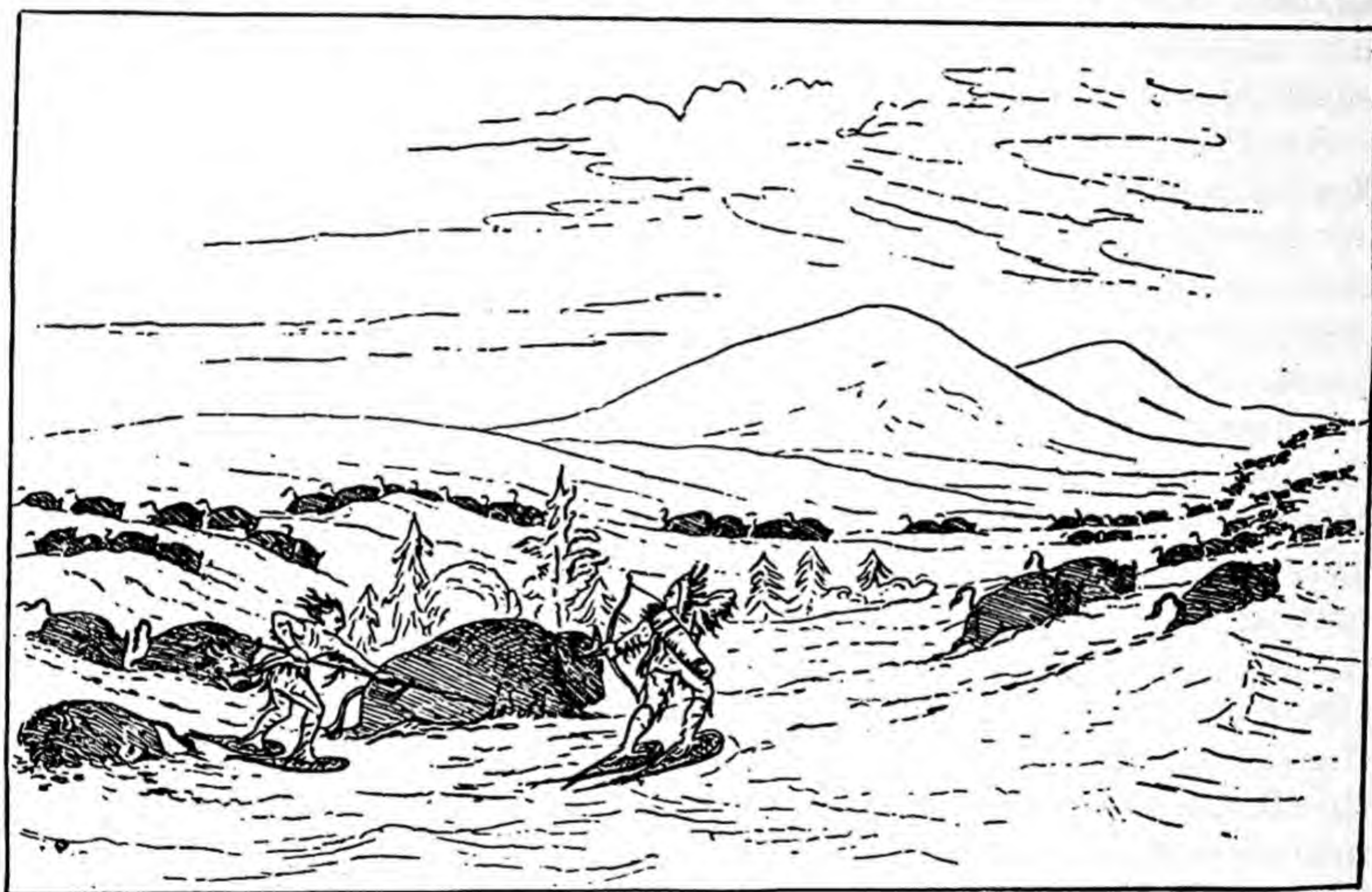
TRAP CHARM
North Borneo

*Museum of
Ethnology, Cologne*

CHAPTER FOUR

This Friendly Earth

FROM THE BEGINNINGS of time the very subsistence of human life has depended upon the gifts which this old earth chooses to grant to man. Bread and meat, fish, fruit, and vegetables—the foundations of our present-day diet—are still the same basic



INDIAN HUNTERS ON SNOW-SHOES

By courtesy of the American Museum of Natural History, New York

means of existence as they were when the first human beings walked on the earth. Even in our 'Atomic Age' we have not yet been able to create either nectar and ambrosia or the philosopher's pill as substitutes for these fundamental foodstuffs. The only difference is that the size of our world has shrunk. It is now, more than ever, One World.

When drought dooms the wheat harvests of Argentina and Canada or the rice harvests of Burma and Siam; when the meat production of the cattle-producing countries lets us down, starvation rules the earth exactly as hunger harassed the much smaller

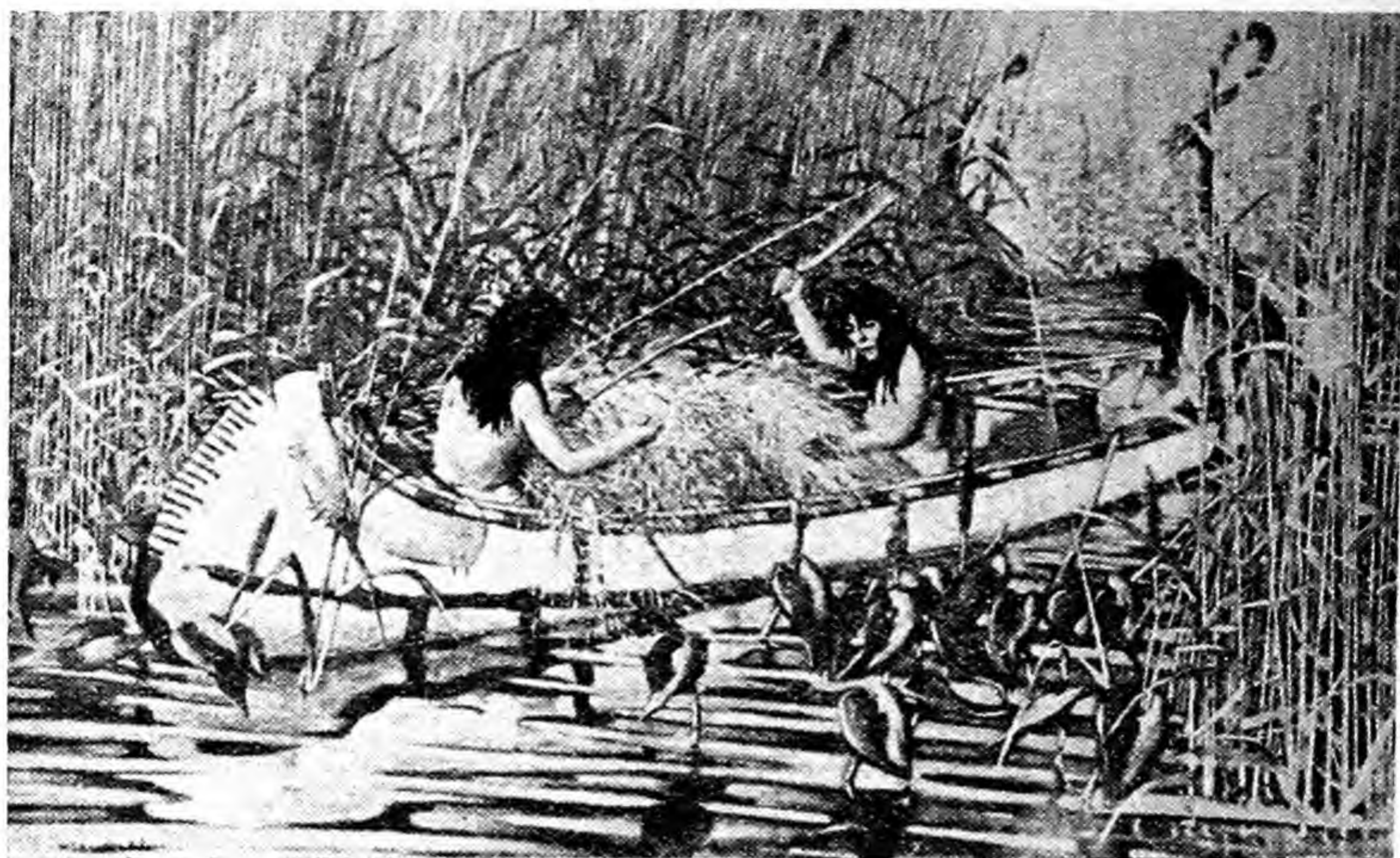
worlds of primitive men when the buffalo herds stayed away from the prairies, when the caribous of the Canadian Indians failed to appear, when the waters of the Nile refused to rise in Egypt, when *glossina*, the tsetse-fly, decimated the East African herds, when the Siberian reindeer withdrew to the farthest northern reaches, when the heat killed the African Bushmen's wild melons, when the nardoo seed and the bunya-bunya burned in Australia.

Although we have created the prerequisites for increasing the population of the globe by learning to wrest more food from the soil, in principle, our food exploits are still based on the ancient practices of our forefathers. Like them, we are still dependent upon the products of the vegetable and the animal kingdoms. To-day, as millenniums ago, the tilling of the soil and the art of husbandry are foundations of our nourishment; and neither our primitive ancestors nor we moderns have been able to overcome the hazards of climate.

All growth of animal and plant food depends on climate to the largest extent. Indirectly, all forms of human life are shaped by the influences of climate. Man has, therefore, been compelled to adjust his habits and possessions and all his material needs to the climate into which he was born. Correspondingly, the members of the animal kingdom had to adapt their organisms and the functions of their bodies to its whims.

Subjected to probably the most severe climatic changes, and consequently to the greatest changes of flora and fauna, was the race which for over seventy-five thousand years made the history of the Stone Age—the race of the Neanderthal man. The ingenuity of this very ancient race was able to cope with the tremendous changes of the climate by a successful economic and cultural adjustment to the shifting environment. Although the Neanderthal man had not yet developed a knowledge of husbandry and of the cultivation of plants, it was perhaps just this very ignorance which made it possible for him to survive under continuously changing conditions. He subsisted on whatever nature offered him.

Characteristic of the form of economy of this early palæolithic man is the common hunt, in which a group of tribesmen joined. Plant foods of wild berries, seeds and wild fruits were supplemented by the meat of the rhinoceros and mammoth, reindeer and aurox, and woolly nasicorn and cave bear. The extant hunting tools and weapons of these people indicate that it must have been impossible for the individual hunter to kill any of these animal giants without the co-operation of others; hence the collective



CHIPPEWA WOMEN

Beating off the kernels of wild rice into the bottom of their canoe
By courtesy of the American Museum of Natural History, New York



IROQUOIS INDIANS

Harvesting corn

By courtesy of the American Museum of Natural History New York

hunt. The form of economy of the Ice Age consequently necessitated the organization of bands as a prerequisite for the survival of the individual. Another factor indicating the co-operation of the whole group was the fact that the quantity of meat obtained from a single prey animal surpassed by far the needs of one individual family and was sufficient to allow its distribution beyond the family circle. The reasons for this social practice were by no means humanitarian, the 'share-all' being dictated by economic need. This method of distribution of the hunted game among all had the further advantage that, in case of bad hunting luck of one group, all could share in the benefits obtained by others. With its knowledge of the battue hunt, it was this type of society that developed also the first robots, the first animal traps.

This form of economy of the early Palæolithic Age, which has been established as the indisputably oldest of all forms of economy known to man, is by no means extinct to-day. It is practised in our time by all those primitive tribes whom we call hunters and food gatherers.

Under varied geographic conditions, they are scattered all over the globe. They live in the regions of the tropical, primeval forests everywhere: the Pygmies of Africa, the Veddas of Ceylon, the Semang and Senoi of the Malacca Peninsula, the Kubu of Sumatra, others of South Asia, and in South America numerous bands of the Gés family. The Bushmen of South Africa and many Australian tribes are the hunters and food gatherers of the sub-tropical steppes and deserts. The Fuegians of the extreme southern American sea-coast are their sub-arctic counterparts. The economic practices of these peoples show distinct relation to the varied climatic conditions of their respective habitats. The outstanding characteristic is the lack of stability in their lives caused by the scarcity of food. To survive, even their smallest groups must often exploit large territories, which compels them to make continuous migrations.

At this early stage of social development, a division of labour was developed, with the women mainly gathering the vegetal products like fruits, bulbs, roots, and seeds, and the men providing meat and fish. The women's tool to break the soil for getting



AUSTRALIAN HUNTER

at bulbs and tubers is the simple digging stick, mostly consisting of a pointed branch. The men's hunting weapons are spears and clubs and, in some cases, bows and arrows.

The skill with which they use their primitive tools is amazing to an observer. They feel and act, as the explorer Seiwert says of the Bagielli, a Pygmy tribe of the Cameroons, like 'lords of the forest.' Despite their small stature they fearlessly attack chimpanzee and gorilla, leopard and buffalo, and even the mighty elephant. The same author's description of one of their methods



HUNTER IN OSTRICH MASK, APPROACHING OSTRICHES

Bushman Drawing

After Stow

of elephant hunting shows interesting analogies to the mammoth hunts of the Ice Age.

They first cover their entire bodies with fresh elephant dung, which enables them to cover up the human scent and to approach the animal unsuspectedly. Creeping on their bellies, they advance slowly, until they reach the animal itself, to suddenly push with great power a poisoned spear into the soft lower parts of its body; whereupon it soon collapses. With their sharp bush-knife they then cut off the trunk, and their victim bleeds to death.

This is just one example of early man's many ingenious methods of overcoming by ruse the drawbacks of his primitive equipment. He is equally inventive when it comes to the full exploitation of available plant foods. As soon as one area has been exhausted new quarters are set up in another, until an entire district, often several square miles, has been completely exploited. With the change of seasons, the gathered products change. Thus in dry seasons the Bushmen collect by the thousands ripened spike

melons growing on the barren sands of the Kalahari. These melons enable them to live without water.

A well-established tradition prevents these tribes of the hunting and food-gathering stage from devouring everything in sight. They discriminate carefully between useful and harmful plants, and exclude the latter from their diet. The discovery of a new food plant is, to them, a great invention. The cousins Sarasin name forty plant and twenty animal species which are used for food by the Vedda tribe. The Australian aborigines' usage of edible plants is even greater; Thomas mentions three hundred of them.

As for the size of the hunting and food-gathering groups, it is logical that bands are smallest where food conditions are most unfavourable, as in Tasmania, Australia, and in the arctic region. The average Tasmanian group consisted, according to H. L. Roth, of only three or four huts, inhabited by three or four individuals each. The most numerous group among the primitives of Malacca visited by Martin had twenty-seven people. Seligman found the Veddas living in bands of one to five families.

According to Malinowski, most Australians roam in small units of two or three families, with a total of six to nine persons. With more favourable economic conditions, the bands grow in size. A Kurnai group of south-eastern Australia was, as Howitt states, composed of eight families; a Wurunjeri group of six. In the Bushman territory Passarge found communities living together under twelve adjoining windbreaks. The Andamanese settle in groups of about fifty individuals.

But even if we recognize the hunters and food gatherers as adherents of the oldest form of economic activity, their way of life constitutes by no means 'the beginning.' Their many technical skills, their knowledge of weapons, traps, hunting methods, and cooking with fire, evidence a long previous development. During former centuries man's intellectual superiority had made him surpass the animals which are still forced to adjust their bodies to the available food in its natural form. Man had found the proper

DIGGING STICKS

Gran
ChacoBritish
ColumbiaBritish
Columbia

methods of preparing what he found in a way most suitable for his organism. By changing the raw materials of his diet with the help of fire, he made his food tasty and digestible.

How humanity advanced from this earliest acquisitive economy to the higher stage of agriculture and the domestication of animals is one of the most fascinating problems of ancient and modern science. The scholars of classic Greece pondered over this question. They distinguished three forms of economy: their own, based on agriculture; a second, applied by the cattle-breeding nomads on the rims of the Grecian world; and a third, the purely acquisitive system of food gathering and hunting. But the champions of this conception made the fundamental mistake of forcing these three coexistent cultures into a chronological sequence. From their error arose the theory of the "three stages" of hunting, cattle breeding, and agriculture—a theory that was widely accepted for many centuries without refutations. The initial stage of food gathering and hunting was described either as the golden age of paradise or as a semi-animalic period of complete savagery. This persistent theory of the three stages of human economy was reflected in the eighteenth-century writings of Rousseau and Adam Smith. Its nineteenth-century prophets were, among others, Friedrich List and the Italian S. Cognetti de Martiis, the French expert on prehistory Mortillet, and the Belgian Laveleye.

However, this old theory and especially its assumption of a chronological sequence could no longer be upheld in view of the increasing ethnological material and the new scientific facts brought in from the field. The works of Ernst Grosse and Eduard Hahn especially cast new light upon the different economic forms of human society. Yet even to-day the scientific struggle about the question of the origin and invention of agriculture and cattle breeding has not come to an end. Many scholars still try to explain the advance from the acquisitive to a productive form of economy with the help of psychological analysis. Taylor, for example, believed that the invention of agriculture was no complicated 'invention' at all. He held that it was quite natural for hunters and food gatherers to sow or plant the familiar seeds and roots in a suitable spot. As a consequence of this habit, he argues, the roaming hunters and food gatherers settled down, thereby laying the foundation for a higher form of existence, culturally speaking.

On a closer view these psychological explanations turn out to be mere conjectures. The ethnological facts show with great

clearness that the psychological preparedness (one of the most important elements of which is the capacity to wait for the fruit or plant to ripen) to proceed to agriculture was non-existent in the minds of the hunters and food gatherers. Whenever and wherever benevolent white men have tried to convert acquisitive tribes to agriculture the results have always shown that the greatest enemies of the new and better form of life were the prospective converts themselves. The seeds distributed for planting either went directly into the stomach instead of into the soil or, when the fields were prepared by white experts, the immature young plants were pulled up and eaten on the spot.

The Brazilian Government chose the Bororo, a hunting and food-gathering tribe, as 'guinea-pigs' in an agricultural experiment. They received soil and seeds. The fields were prepared for them by government crews, and they were provided with enough additional foodstuffs to subsist until harvest time. What happened? As soon as the natives were the happy possessors of axes they had a good time cutting down the Piki trees they formerly had to climb in order to pick the fruit. The sugar-cane plantations needed permanent sentries to protect them from complete destruction. The cassava fields were ruined. The women, accustomed to the digging of roots in the forest, pulled up the growing shrubs and went to work with their digging sticks, looking for 'hidden roots.'

A white missionary who tried to make the African Wasekele, a hunting and food-gathering tribe, appreciate the blessings of agriculture and Christianity combined, received the shrewd rebuke: "Do the monkeys die of hunger? We know the forests and the waterways. We move from place to place, because God wants us to. We must not touch a hoe to till the soil, because God has forbidden us to do so." Who is not reminded by these words of the "lilies of the field"?

The Negritos of Luzon who have been persuaded at times to try a little planting, "do not want to be tied down to a fixed place," Vanoverbergh states. He adds: "Very often, before their plants bear fruit, they are already far away in some other part of the forest."

One of the best examples of the hunters' and food gatherers' complete inability to invent or develop agriculture is furnished by an old tale of the Pygmies of the Belgian Congo, who, proud of their courage and their liberty, regard themselves as superior to the agricultural Negroes among whom they live without ever adopting their form of economy. The tale, recorded by Schebesta,

deals with the right of the Pygmies to collect bananas from the Negroes' plantations.

A Pygmy, on his roamings through the forest, came one day to a chimpanzee village. He was accompanied by a Negro. There they saw, for the first time in their lives, a group of banana-trees laden with golden fruit. Since they believed the fruit to be poisonous they did not dare to try their taste. The Negro, however, kept encouraging his companion, the Pygmy, to find out what their taste was like. Finally, the Pygmy ate some and found that they were delicious. In spite of this, the Negro still did not dare to do likewise. In the evening, as they went to sleep, the Negro was convinced that his companion would die of the 'poisonous' fruit during the night. To his great surprise, he found him alive in the morning. Now, he himself finally dared to eat of the new fruit, and he, too, found it excellent. Both thought of ways to take bananas along to plant them near their homes. The Pygmy took some of the fruit and laughed at the 'stupid' Negro who took some of the shoots of the tree for slips. Both went home. The dwarf planted the fruits in the wilderness; the Negro set the shoots in his plantation. But the Pygmy waited in vain for his bananas to grow. They rotted in the soil, and that was that. How great, however, was his surprise when he came months later to the Negro's village where he found a group of beautifully grown banana-trees full of fruit! Nevertheless he pointed out to the Negro that he was not a planter and that he preferred by far to pursue his hunt. He advised the Negro to go on planting bananas because from time to time he would drop in to get his share. Since that time, the Bambuti claim the right to gather bananas in the Negroes' plantations, because the Pygmies are the inventors of the fruit and only through them the Negroes learned to eat them.

These are only a few examples. They demonstrate that conjectures based upon our present-day psychology do not lead us anywhere in an effort to determine the step from food gatherers and hunters to agriculture and the domestication of animals.

Another presumption that lingers in the mind of many an anthropologist and economist does not clear the way either. This is the idea that sedentariness was the result of agriculture. This presumption holds that it was not until the invention of agriculture that mankind became relatively sedentary and that sedentariness was a consequence of, and not a prerequisite for, the invention of agriculture. This opinion, too, is a psychological construction which is not borne out by the facts. There can be no doubt that at least a relative sedentariness was the necessity from which an invention of agriculture could derive. Furthermore, the in-

ventors of the higher forms of economy had to possess the necessary psychological readiness, the attitude of waiting for the ripening of the fruit.

What groups of people, then, possess all the psychological and factual prerequisites to become the inventors of agriculture?

They exist, indeed, furnishing by their type of economy in all respects the missing link between hunters and food gatherers, on the one side, and the tribes of productive economy, on the other. I call them the harvesters. Their food supply is derived from the harvesting of one or a few wild plants, which provide their chief sustenance for the entire year. They are neither pastoral nor agricultural, but base their entire economic system upon the harvesting, not just the gathering, of wild plants.

Harvesting tribes have lived or still live to-day in all five continents. The economic form of the later Palæolithic Age up to the beginnings of the Neolithic period was based on the harvesting of wild fruits and grains, as numerous excavations have demonstrated. In Africa we find to-day scarcely any real harvesters, but the old reports indicate that the harvesting of wild plants and seeds must have played a certain rôle in the economy of many African tribes. Herodotus reports that the lotus lily was harvested by the Egyptians in great numbers, to be dried in the sun, worked into flour, and used for the baking of bread. He describes the root as tolerably sweet and the size of an apple. Kotschy reports from Kordofan that wild rice was harvested to serve for the baking of bread. Schweinfurth specifies three different *Oryza* (rice) species which constituted the main source of food in tropical Africa without being planted. In the Senegal region harvested wild rice is an important item of merchandise on the market-places. It is in great demand, and sells at higher prices than the rice obtained from agriculture.

In Australia we find harvesting tribes especially in the far eastern, southernmost, and northerly districts. The bases of subsistence of these harvesting tribes are the wild yam, the nardoo seed, the lily root, the bunya-bunya fruit, the cycas fruit, and others. It is significant that these products are either kept in their natural state or processed into forms more easily preserved, and that they provide the main sustenance for the entire year. They are also widely traded. In some instances treatment of food by fermentation is known, as among the tribes of the Carpentaria Gulf. This process is further developed in Polynesia and among certain arctic tribes. In southern and western New Guinea the harvesting fruit is the wild sago palm, which is the main source of food for many tribes.

The ancient reindeer breeders of Asia were probably originally fishermen and harvesters before they proceeded to reindeer



AUSTRALIAN
NARDOO PLANT



THE BUNYA-BUNYA FRUIT OF
THE AUSTRALIAN HARVESTERS

After R. Brough Smyth

breeding. Even to-day large sections of the arctic regions are inhabited by the Chukchee, the Yakut, and the Tungus, in whose



CALIFORNIAN INDIAN WOMEN
TRANSPORTING WATER AND
GRASS SEED

After Francis Drake

lives harvested wild roots, onions, and garlic play an important part. The Chukchee, especially, gather the roots and the centre portion of *Claytonia acutifolia* Willd in great quantities. This plant is pickled and eaten all year long, up to the next harvesting season. The Polynesians could not have settled on the coral atolls without the existence of the wild bread-fruit tree and the wild coco palm. In the Chaco region of South America the algarroba and the *tusca* are harvested. The Araucanians and the ancient Peruvians harvested the wild potato. In a prehistoric collection from Peru

Harshberger found small tubers of this plant, about an inch in diameter, very similar to those of the wild-potato plants still growing on certain Mexican mountains.

Among the most important North American harvesting foods are wild rice, the piñon nut, and the acorn. These are substituted for and supplemented by additional plants, like the pods of the mesquite tree, the mescal root, the tule root, and numerous wild seeds. East-central Californian tribes mainly subsist on acorns and piñons. This accounts for the fact that their tribal histories do not speak of famine until recent times, as is the case with many hunters and food gatherers. It is, even to-day, a catastrophe for the Indians when, as in 1941, there exists a scarcity of the acorns from the oak-trees of the San Joaquin Valley. These acorns furnish the most important staple food to the members of the Yokuts tribe. The records of this event say: "Before the white man brought his civilization to this area the acorn meats and acorn flour could be kept indefinitely. But now they become frequently grub-infested after only a few months. Almost every Indian camp—and there are still hundreds—keeps a big store of dried acorns in wicker willow baskets."

Perhaps the most important harvesting products of the North American Indian tribes are the wild rice and wild oats of the Lake States region. As early as 1683 Father Hennepin reported in his diary: "In the lakes grew an abundance of wild oats, without any culture or sowing. The old Indians to-day tell many interesting stories in connexion with the rice-fields and that many bloody battles were fought between the Chippewas and Sioux for the possession of the wild rice beds."

According to legend, the wild rice was "provided by the Great Spirit to keep the Indians well and strong," and they named many streams, lakes, and villages after it. In the Chippewa tongue the month August means "the month of harvesting wild rice" (*Mah-no-nim-e-kay-ge-sis*). The harvesting of the wild rice marks the central point of the economic life of most Sioux and Algonquin tribes of this region. Shortly before the harvest, as Burns reports, the green standing rice-stalks are tied into bunches by the women. This is done to protect the grain from injury by winds or loss to water-fowl, and also to facilitate the subsequent harvesting. When it is ripe it is gathered in canoes, which are pushed through the rice-fields by means of paddles or long forked poles. The Ojibway have legends telling of a horrible time of famine, and of their prayers to the Great Spirit, who finally appeared to the medicine man, telling him: "Look to the seeds sharp as spears. Sweet food is within." This advice was accompanied by detailed directions for the gathering, the hulling, and the parching of the grains. In appreciation of this miracle, the Ojibway hold their annual

harvest ritual in honour of the Great Spirit during the rice moon. After the rice has been harvested it is thrashed with sticks, dried in the sun, parched, cleaned, freed from any chaff, and then stored away. The nutlike sweetness of the kernel makes wild rice extremely delicious.

In contrast to the hunters and food gatherers who roam within the tribal territory and live from hand to mouth, these peoples store food during times of plenty, in anticipation of times of need. Their living-quarters are more solid than those of the older acquisitive economic group. They stay at one place, namely near the harvesting field, which comprises often many hundreds of square miles. Whatever types of fruit are harvested by whatever tribes, the shape of their form of economy has exerted the strongest influence upon the development of all their cultural possessions. Most important are their caches and storage houses for the safeguarding of the harvested fruits.

Although they have no planned agriculture, their attitude towards the wild plant is different from that of the food gatherers and hunters; it is similar to the mental approach of the agricultural peoples. In songs and ceremonies the harvested fruit is celebrated and asked to multiply, for the harvesters are vitally interested in its survival. In western Australia shoots of some wild yams are put back into the soil during the harvest; and the Ojibway strew some of the harvested rice back into the water so that it may help them towards the next harvest. The Pacific owners of wild coconut palms clear the soil to make room for new shoots when an old tree has been felled.

The harvesting field becomes the centre of tribal life and of social activity. The security of subsistence is responsible for the increasing number of tribal members: the communities are much larger than those of the food gatherers and hunters. Winnebago settlements of three hundred are no exception, and the communities of the Obotos and Wakatimi of New Guinea consist of a thousand people who live off the wild sago palm. In America the wild-rice region has been the centre of expansion of the Sioux and Algonquin tribes. In Polynesia, the wild bread-fruit tree was responsible for the migration of many ethnic waves.

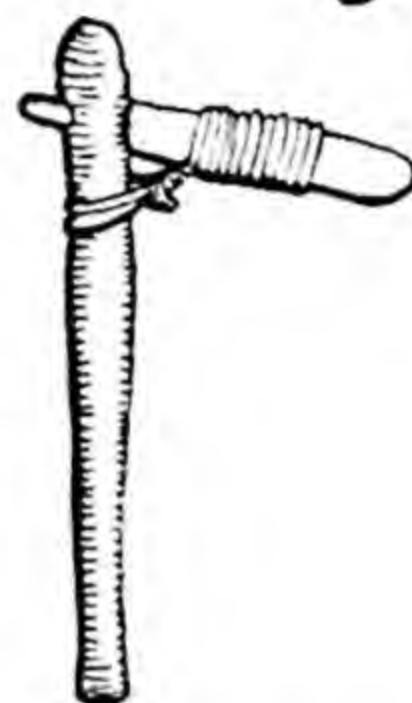
Only these peoples who harvest without sowing, but who harvest in exactly the same manner as do the agricultural tribes, can be regarded as the original inventors of agriculture. In addition, the economy of the harvesters offered the prerequisite for the invention of cattle breeding. The hunters and food gatherers,

continuously harassed by the need of the moment, cannot afford a friendly attitude towards their prey animals. In order to survive they have to kill whatever is in sight. The harvesters' main subsistence, however, is guaranteed by the harvesting fruit. They can look upon the wild animal with a different and friendly attitude.

Thus the peoples of the harvesting culture alone have fulfilled the prerequisites for a development of agriculture and the domestication of animals. It is very likely that the arts of agriculture and of stock breeding have developed from this progressive, acquisitive form of economy. Perfected in the course of history throughout suitable regions of the globe, this economy was finally united with the characteristic feature of the high cultures—the tilling of the soil with the plough. The exact place where ideal conditions led to the invention of agriculture cannot be determined to-day, although many indications seem to suggest the southern or central region of Asia.

Since we have certain proof from the early neolithicum of the existence of agriculture we can date back its earliest developments to about the fifth millennium before the birth of Christ. The scientists Heine-Geldern and Menghin have determined the so-called "culture of the cylindrical hoe" (*Walzenbeilkultur*) as the oldest neolithic basis of productive agricultural economy which spread all over the earth from its presumably oldest places of distribution in southern Central Asia, probably China. Its name is derived from a mostly edged stone tool, the cylindrically shaped hoe, a hatchet with a circular transverse section, a sharpened blade, and a round or conical back.

The distribution of this culture is, indeed, of global proportions. Its mighty waves penetrated Asia and Europe, including all regions of eastern and southern Asia, and the Melanesian island groups. Though determined by local conditions, the agricultural economies of the cylindrical-hoe culture were most often combined with the raising or breeding of pigs. This means that if wild boars were obtainable they were caught and possibly bred; mostly, however, they were kept in hurdles until needed for food. This explains



(Top) FIELD HOE
WITH IRON BLADE

Value: 1500 cowrie
shells

Cameroons

After Thorbecke

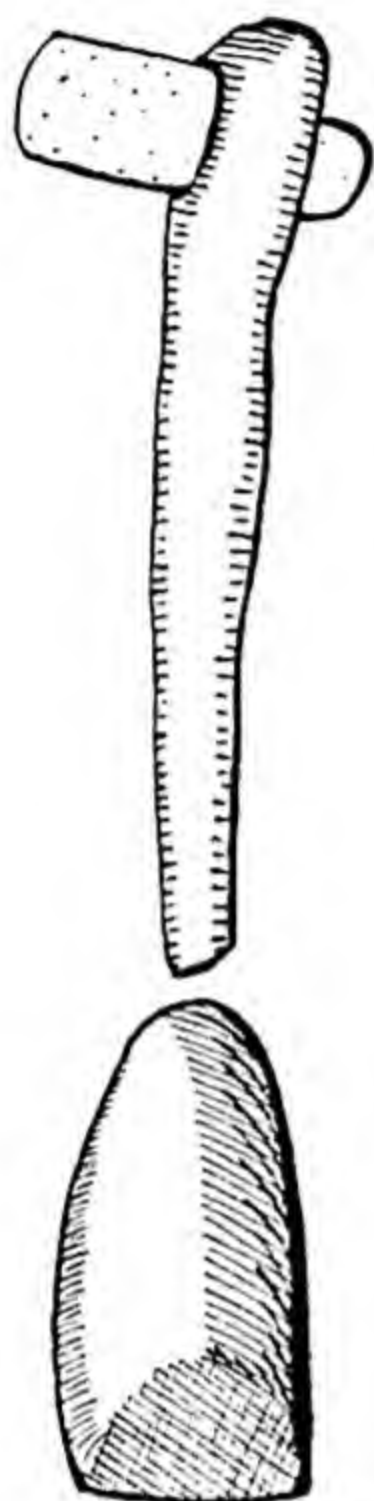
(Bottom) HOE
WITH STONE
BLADE

New Guinea

Museum of
Ethnology, Cologne

the fact that at most places of excavation the pigs' bones discovered were boars' bones rather than those of domesticated species.

As to the types of earliest plants systematically cultivated by man, it is uncertain whether they were shrubs, bulbs, tubers, or trees.



NEOLITHIC
HOES

(Top) Found at
Sigerslev,
Denmark

After Déchelette

(Bottom)
Cylindrical Hoe
Stone

After O. Menghin

Werth believes that in South Asia the banana-tree may be considered the oldest domesticated plant. According to Brunton, the most ancient cultivated grain was the emmer wheat. It was used in Egyptian agriculture as far back as 5000 B.C. It is hardly possible to determine the age of cultivated bulbs or shrubs by means of prehistoric findings but these findings furnish more accurate facts when it comes to the oldest cultivated grains. Drawings of ears of corn and of cultivated grains dating back to the early Neolithic Age have been discovered; and the excavations at Anau, in Transcaspia, have proved that the cultivation of barley was known as early as 4500 B.C. Among the cultivated plants of the Neolithic Lake Dwellers of Switzerland were the midget wheat, the emmer, the one-corned grain, two species of barley, and one kind of millet. Furthermore, they cultivated peas and lentils, flax, poppy-seed, and a type of grafted apple-tree.

Whatever the identity of the oldest cultivated fruits or plants may have been, the earliest form of agriculture, still ignorant of the plough, knew only the hoe and, occasionally, still used the ancient digging stick. The name of this form of economy has been derived from the hoe, which usually consisted of a handle with a stone, shell, or iron blade.

Even to-day the distribution of the hoe cultures is on a tremendous scale, with tropical Africa, America, Indonesia, and Oceania as its principal regions. Among the most frequently cultivated plants are bulbs and tubers, like yams, manioc, batata, taro, and potato. Among the grains, maize (corn), rice, and durrha are the most prominent. The number of species cultivated by one tribe is, as a rule, quite limited. One single type of plant usually is so dominant that it alone furnishes the principal basis of economic existence. This does not mean that this principal plant is

not supplemented by other produce of lesser importance. Also spices and narcotic plants are cultivated almost anywhere.

If we ask the primitive agriculturists about the origin of their kitchen plants and the age of their economy they will all answer that their ancestors knew plants and agriculture from times unknown, as the ancient myths and sagas prove. The Tupi claim



HOEING THE FIELD

Africa

Photo Museum of Ethnology, Cologne

that the manioc shrub emerged blooming from a grave. The Bakairi believe that the same plant was given to them by the *bogadu* fish, living in a near-by river. Gods and ghosts, animals and heroes share the mythical glamour of having blessed humanity with the fruits and plants of agriculture, those all-important gifts from above.

There can be no doubt that the invention of agriculture marks one of the greatest contributions woman has made toward the welfare of mankind. It was woman who in the acquisitive economy already took care of the provision of the family with vegetal food ; it was woman who, consequently, put the great new invention of sowing and planting into practice. Of course, the male habit

of hunting did not stop with the introduction of agriculture, but continued as in the times of old, even though the chief nourishment of the tribes was taken care of by cultivated plants.

The clearing of a new field, the first planting or sowing, and even the determination of the spot destined to become a field, are often the occasion for elaborate festivities, especially because the whole village population takes active part in agricultural work.



A STORE-HOUSE ON HORO-WHENUA LAKE

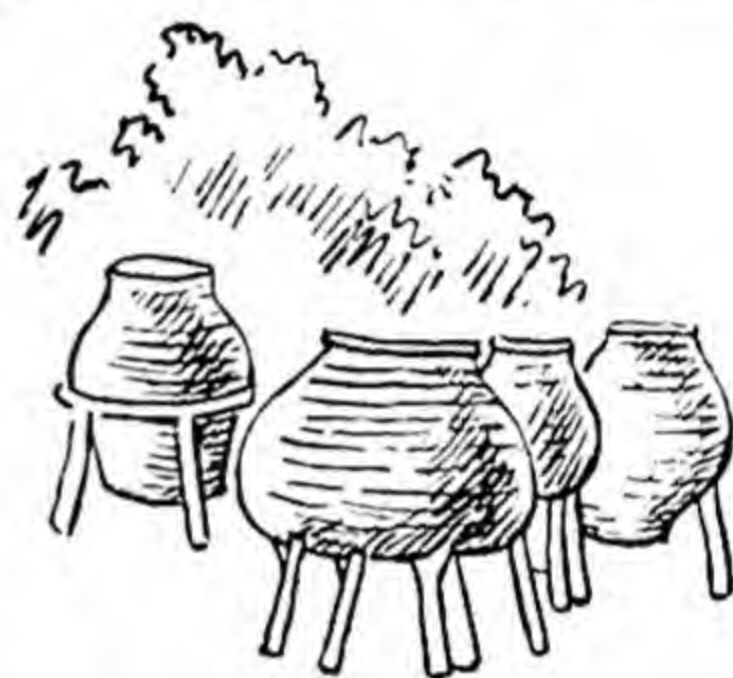
New Zealand

After Taylor

When it comes to deciding on a proper spot for a new field the Nad'a of Western Flores (Sunda Islands), for instance, take no chances. They use their indispensable oracle, a bamboo stick called *tibo*, which when allowed to crack in the fire, 'tells,' by the size and direction of the crack, what they should do. They address the *tibos* in the following way: "Tibo, we wish to lay out a new field. If there is something wrong with the path leading to it or if the plot contains anything harmful please tell us by cracking at your upper right!" If the answer is satisfactory the work is started without delay.

When a tribe of the hoe culture has decided where the new field is to be everybody celebrates by singing and dancing, often under the leadership of the medicine man. Next morning they

start out to commence the work. A section of forest, bush, or steppe is cleared ; trees are cut down with the stone-bladed hoe, with the roots remaining in the soil. The cleared-away branches and shrubs are burnt on the spot ; the ashes are raked into the ground to serve as fertilizer. The women have the picnic baskets ready, while the entire male population does the heavy work. When the field is cleared, often after days of hard work, the women take over the planting. At this point, all kinds of magical performances serve to safeguard the growth of the all-important plant. The Nad'a, again consulting their *tibo*, have an especially appealing way of inviting the "souls of the cultivated plants to assemble on the field." "Tibo," they say to the little bamboo stick, "we have now cleared the whole big field. All weeds have been pulled up, all shrubs are burned. It is clean. We now invite the souls to come to this place, laden with rice, so that we may have a rich harvest. We want the beams of the storage-houses to break under the weight of the rice and the floors to cave in. Please, Tibo, promise us such a harvest. If you say yes, crack to your lower left !" It is now up to the women to put the seeds into the soil.



STORAGE CONTAINERS

Ovambo, Africa

*Photo Museum of
Ethnology, Cologne*

Among the South American Indians, pieces of mandioca stems are planted in the soil so that they may grow into the mandioca shrub. The ripe tubers are harvested as needed, and a new slip is immediately put back into the spot from which the grown vegetable was removed. The plantations are kept in extremely good shape, and many a white man has been impressed by their neatness. A Christian bishop, visiting the native fields near the Xire river, in Portuguese East Africa, remarked : " I thought to be able to teach these black fellows a few things ; now I see how much I can learn from them."

Despite this care, it is still the rule among most tribes of the hoe cultures to abandon the fields after one or two harvests and to move on to clear a new field, although some Congo tribes and also some Melanesians now apply a regular succession of crops. The African sequence may, for instance, be the following : beans on a newly cleared plantation, with spiked millet sown after the harvest. Manioc shoots are planted among the millet ; the growing tubers are usable for about two years. When they begin

to lignify a new field is cleared elsewhere and the succession of crops begins anew.

Many primitive tribes of the hoe culture are well aware of the benefits of fertilizing. Some of the East African Bantu use cattle dung for this purpose. Livingstone noticed that the Zambesi peoples fertilized their fields with charred weeds. The North American Indian tribes of New England used fish and shells. The Incas of Peru knew the beneficial effects of guano dug into the fields; the ancient Mexicans made use of human excrement.

The flower garden as a manifestation of æsthetic taste has its earliest origin in the hoe culture. Vines and blossoms are planted on the rims of the fields or, as among the Papua, between the fruit-trees. These first efforts reached perfection in the floating gardens in the Lake of Mexico and of the legendary Queen Semiramis.

The other branch of productive economy which has since its inception moulded world economy and world history is the domestication of animals and the breeding of live stock, especially cattle.

One might assume that the art of animal domestication and cattle breeding developed out of the hoe culture. This is not true. The oldest data on domestication, as well as the structure of the hoe culture itself, militate against this supposition. The culture and mentality of the herdsmen are diametrically different from those of the agriculturists. The fact that we may find an occasional flock of tamed animals in some present-day villages of the hoe culture does not prove that they have been bred there. They were merely caught in the wilderness and tamed.

Chickens and pigs may very likely claim a special position, because they are non-migratory. Neolithic findings show us that wild jungle fowl and wild boars were kept and corralled in large numbers until the demands of the kitchen necessitated their killing. However, the practice of regular animal breeding encountered among peoples of the hoe culture was adopted from the herdsmen.

The dog, the oldest domesticated companion of man, played the same rôle during the Palæolithic Age. His forefather is the wolf. The oldest centre of the dog's domestication lay in northern Asia. The dog migrated from there to Europe during the ice age. Already domesticated, he arrived in America with the first human settlers.

The breeding of horses, cattle, and sheep developed at places where the suitable wild species were abundant. The high plains within and northward of the central Asiatic mountain chains

offered favourable conditions. Flohr and Menghin believe that the regions of western Turkestan up to the plateaux of Tibet were the scene of the development of cattle breeding ; and, indeed, even the present-day type of Tibetan yak breeding has all the ear-marks of a very ancient pastoral culture. The earliest known domesticated species of cattle is the long-horned type, which can be traced back to the wild species of the Asiatic aurox. The domestication of sheep, and later of goats, also seems to have originated in that particular part of the globe.

North of the region of the first cattle breeders, in the Altai Mountains and in the steppes of the Kirgis and Barabas, the culture of the horse and camel breeders found its earliest development. From there it expanded, as an unbroken complex, to the west as far as the steppes of south-eastern Russia and to the Caucasus ; in the East it reached the Gobi Desert. Although horses and camels were originally used as beasts of burden and as providers of milk, no independent economic form could possibly develop from the unstable form of life of these tribes, who were sometimes even unable to provide enough food for their animals. Consequently, we find that the breeders of riding animals live practically without exception in symbiosis with tribes adhering to the economic forms of harvesting, of agriculture, and of cattle breeding. There can be no doubt, however, that the breeding of horses was customary on the plateaux of Central Asia as early as the fifth pre-Christian millennium—that is, towards the end of the European ice age.

The culture of the cattle-breeding peoples proved to be of world-embracing influence, whether actively through the migration of the tribes, or passively through the mere adoption of their economic form by others. Archæological discoveries, especially those described by Pumpelly, have thrown much light on the structure of the oldest cattle-breeding cultures. The findings at Anau, near Ashabad, in Transcaspia, disclosed at a forty-five-foot depth a lower layer with very well preserved remnants of a cattle-breeding culture dating back to about 3500 B.C. Since evidences of barley and wheat as cultivated plants have been found in equally ancient habitats it may be assumed that the Anau culture represents already a blending of the agricultural economy and the cattle-breeding economy, and that the latter is of an even older age.

The diffusion of the cattle-breeding cultures from their original places of development took place by active migrations, chiefly in a southerly direction. Europe and Eastern Asia, although adopting the principles of cattle breeding, did not take over the whole

cultural complex of the herdsmen's culture. The southernmost representatives of the Asiatic cattle breeders are the Toda in the Nilgiri Hills of southern India. The main stream of the herdsmen's migration went to Iran, to Mesopotamia, to Syria, and to Africa. In Africa proper the herdsmen spread from the North-east to Egypt and, in fewer numbers, north across the continent to the Canary Islands. Their strongest waves of migration went to East Africa and to the south, avoiding tropical Central Africa. The animals bred were principally cattle, serving as both beasts of burden and mounts.

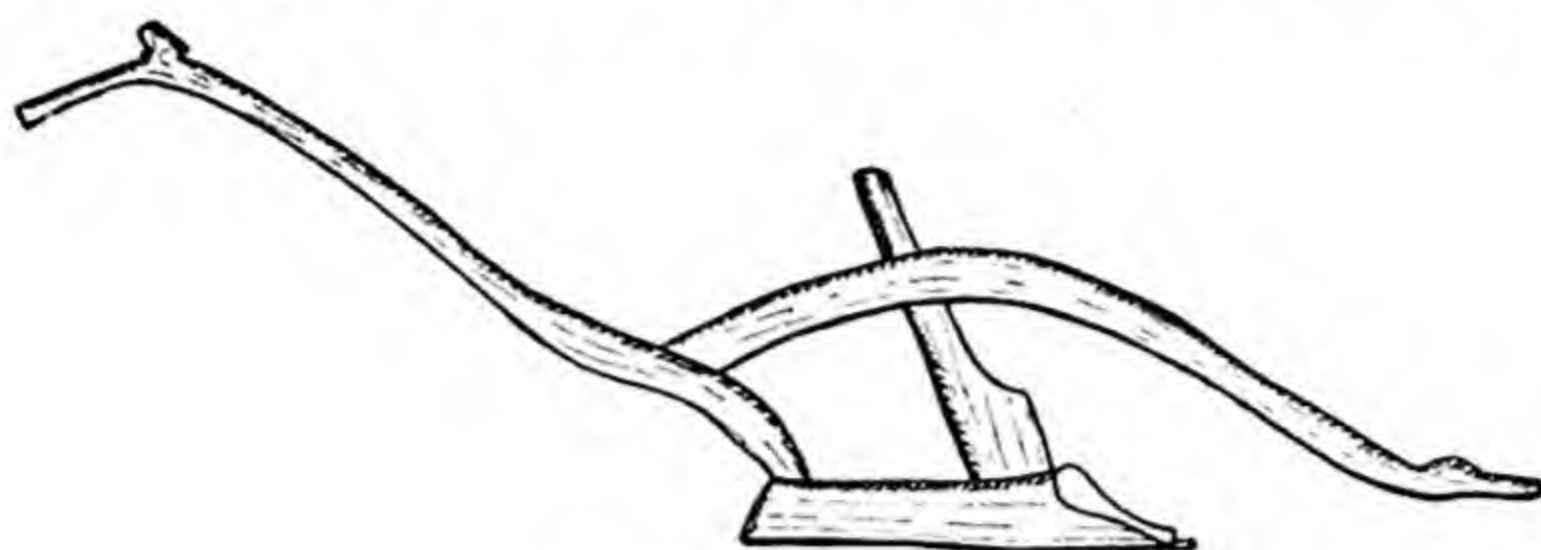
Thus, the main African form of economy is the breeding of cattle, while Asia favours the breeding of sheep and yak. As a rule, the herd is considered a manifestation of wealth which should not be diminished by slaughterings without urgent reasons. Consequently milk, hair, wool, and dung are the principal products, with less emphasis put on meat.

The two main branches of productive economy, agriculture and animal breeding, developed out of the economic form of harvesting. They met and merged in vast regions of the globe. Only in their final merger were all prerequisites for an economic conquest of the earth achieved. Yet if it had not been for the invention of the plough the utilization of immense spaces of the earth would not have been accomplished to make possible the feeding of ever-growing populations. The invention of the plough and the harnessing of animal power—mainly cattle and, later, horses—to pull it enabled man to lay out larger fields, suitable as bases for a truly productive form of agriculture. The plough itself is an application of the mechanical principle of the hoe and of a peculiar spade form of the digging stick. Its earliest evidences go back to the third millennium B.C. It was known to the farming peoples of the Danube region with their so-called culture of 'band-ceramics.' During the same epoch it was already used by the Indo-European tribes.

The first development of the plough culture occurred at but one time in history and at but one place before it spread to other regions of the globe. The place of its first inception was, most probably, the region of the high cultures of Mesopotamia and Egypt.

In its most ancient form the plough consists of wood in the shape of two forked branches, although even the oldest Neolithic specimen indicates the use of a ploughshare fashioned of stone. This is not surprising, since the hoe itself was equipped with a blade of stone or shell. Even to-day primitive wooden ploughs are still in use in some regions, for instance in the east and south-

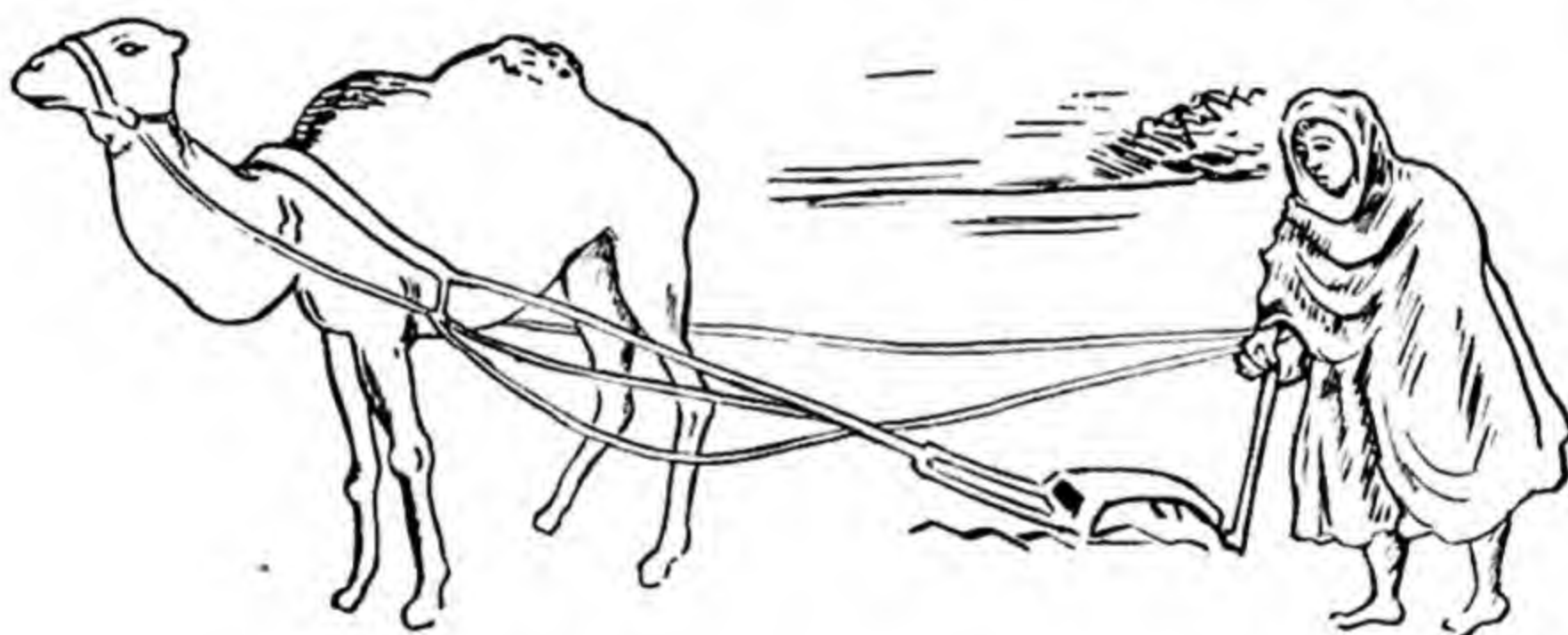
east of Europe. The frequent supposition that the invention of the wheel or of the cart had anything to do with the invention of the use of the plough is not correct. Originally the plough



PRIMITIVE PLOUGH

was used without a wheel. Even to-day the ploughs of the Batak of Sumatra and of the Chinese and Japanese are not equipped with wheels.

The plough was unknown in ancient America, probably on



WOODEN PLOUGH

Kabyles

Photo Museum of Ethnology, Cologne

account of the non-existence of draught animals. In the American high cultures of Mexico and Peru the economic form of the hoe cultures developed into horticulture and the building of terrace-shaped fields.

The most characteristic features of the plough culture are the systematic fertilizing of the soil and the development of intricate irrigation systems. Not before the end of the eighteenth century did sweeping innovations modernize the ancient plough. Then finally the wooden parts were replaced by iron or steel. Several ploughs were combined in a single unit. Later ploughs came to be operated by mechanical power, such as steam-engines and motors.

Thus ends the saga of economy, the story of the development of one of the most important forces which make it possible for



MAN-DRAWN PLOUGH

Ancient Egypt (El Kah)

After Treidler-Herodot

men to live in ever-increasing numbers on the earth. The plough and the knowledge of cattle breeding have not only enabled the peoples who own the great global granaries and live-stock resources to feed themselves, but they have also made them trustees of the needs of modern mankind as a whole.

CHAPTER FIVE

Invention and the Early Trades

GOETHE SAYS IN *Faust*: "No created mind can penetrate the innermost sanctum of nature." In recent years this has perhaps become no longer true. Our ability to photograph cellular



NAVAHO WOMAN WEAVING RUG

By courtesy of the American Museum of Natural History, New York

growth and our newly acquired knowledge of the forces controlling the universe have enabled us to lift the veil from some of the fundamental secrets of creation to such a degree that warning voices like Winston Churchill's express the great twentieth-century fear of our very progress: "The Dark Ages may return, the Stone Age may return on the gleaming wings of science, and what might now shower immeasurable material blessings upon mankind may even bring about its total destruction."

Were these dark ages really so 'dark'? The difference between them and our time lies in the attempt of modern man to elevate himself to the rôle of master of the universe. In bygone ages nature was the omnipotent master of man, who derived his knowledge and his early skills from the phenomena he observed in his natural surroundings. He was the apprentice of the greater forces around him. But even then the functions of his brain enabled him to create spiritual and material possessions worthy of the term 'Homo sapiens' and completely out of reach of the ingenuities of the animal kingdom.

Elephants have been observed ripping branches from trees with which to strike pursuing dogs. We are familiar with the achievements of the beaver, that master-builder. We know of the tiny American wasp that uses a pebble, as a regular tool, to pound the protecting soil over the pit containing its eggs—but are these animal activities evidences of planned thinking? Are these intelligent uses of natural objects actually inventions?

Shrewd as they are, these animals take their tools just as nature provides them. They remain ignorant of man's art of *manufacturing* things out of the materials of nature by giving them new shapes and new possibilities of application. The animals may be users, but they are not inventors.

Since the ice age man knew how to transform the raw materials he found into tools that raised his living standards to a level far above that of his lowly brethren, the animals.

No Aristotle, Galileo, Volta, Edison, or Bell of the primitive past can be individually recognized and honoured as an early inventor. No one man's 'brainstorm' was responsible for the first stone axe, the first woven basket, the first windbreak, or the first fur coat. All these inventions were links in a chain forged by the gradual perfection of the experiences of long generations of unsung inventors. They were the result of many different combinations. We have no right to assume that every prehistoric individual was a genius who invented for himself whatever he needed.

No commonplace is less defined than the saying, "Necessity is the mother of invention." Climatic conditions, psychological preparedness, and migrations of ideas and of peoples were among the decisive factors that promoted or hampered the diffusion of technical knowledge. Snow-shoes and sledges could not be invented in the jungle; fans and ore-melting furnaces could not originate in the ironless arctic. A Bushman genius, however bright, was not ready to work out the loom or the storage-house;

the Australian aborigines could not make felt or conceive of sleeping in a hammock. Although the possession of these skills would have meant improvement in their living standards, their minds were not yet ready for them. Even if taught these secrets they would abandon them quickly, just as the primitive Pygmies look down upon the agricultural Negroes around them.

The independent invention of a cultural element or the adoption of an invention from another culture have one prerequisite in common: that a psychological preparedness must exist in the mentality of the prospective adopters; otherwise a new cultural possession will be neither invented nor accepted. Independent invention and adoption are distinguished from each other by the simple fact that invention is the result of creative process, while adoption indicates merely a receptive nature. A few examples may serve to illustrate this point. The structure of the Japanese culture, for instance, was such that Japan adopted many cultural elements from Western civilization—even the most modern weapons—while the cultures of, let us say, the Bushmen, the Australians, or the Fuegians never would have been ready to accept such inventions. The gap between the two cultures is too great.

On the other hand, primitive cultures have accepted some elements from foreign civilizations without understanding their original meanings. In Africa a safety-pin may be an ear ornament; a gramophone a materialized choir of ghosts. A European watch may be an amusing pattern for circular ornaments.

Another point which is worth stressing in regard to the diffusion of cultural elements is the difference between invention and modification, the first being something entirely new; the second, merely an improvement of an older invention. It is often very difficult to determine the original place of an early invention. Diffusion has taken place on such a tremendous scale that we find to-day, in entirely different regions of the world, cultural centres where not only tools, houses, and objects of daily use are completely alike, but also where they are complemented by the same religious, economic, ethical, and social conceptions.

Most technical possessions of our modern civilization in one way or another have their roots in the ancient inventions reaching back in an unbroken chain to the dawn of time. Although many of the old techniques have been outmoded by perfected manufacturing processes, a great number of man's earliest possessions continue to be used to-day in the same manner or with but little change; others were used by primitive man for centuries before the white man learnt about them.

Among the discoveries and inventions of North and South American Indians made before the arrival of the white man Nordenskiöld listed especially the recognition and utilization of food plants like the maize, the manioc, the potato, the sunflower, the artichoke, and the bean. The Indians domesticated the llama, alpaca, guinea-pig, musk duck, and turkey. Cocaine as well as cotton was known to them. The hammock is their invention, as is the rubber ball, and a method of manufacturing waterproof fabrics. They brewed deadly poisons like curare and obtained poison gas from cayenne pepper, for use as a weapon of war.

Long before Coué and his "every day, in every way," the medicine-men of the jungle cured their patients by auto-suggestive methods. At a time when white surgeons lost 90 per cent. of their patients in attempts at trepanation North African natives knew how to open the human skull with complete safety. They were equally skilled performers of the Cæsarean operation. Centuries before the Nobel Prize was awarded to Wagner-Jauregg for his method of treating general paralysis of the insane, caused by syphilis, with inoculations of malaria East African natives sent their syphilitics 'into the swamps' where they contracted the beneficial fever.

And, corresponding to our manifestations of 'utter luxury,' native telephones built from pumpkin shells and rat skins are an old African possession. Eskimos telephone with skin-covered containers over distances as great as one hundred and twenty-five feet. Air-conditioning towers of the type described by Marco Polo as "artificial lungs, shaped like squat staples," are still commonplace in the Bahrein of to-day. Modern dark spectacles have nothing on primitive eye-shades. In the Arctic split bones or pieces of wood protect the eyes from snow-blindness; woven eye-shades of all shapes are common in Melanesia and Polynesia and in South America, with thin black-felt veils as their Tibetan counterparts.

Hundreds of generations of artisans laid the foundations for our modern material luxuries when they went about manufacturing the first objects of comfortable living from stone, wood, bone, plant fibre, and animal skins. A study of at least the major early industries is interesting indeed, because it tells the story of the beginnings of the things of which we are proud to-day.

When the layman strolls through the collections of any ethnological museum he is confronted with a multitude of objects manufactured from materials of such diversity that he may give up the attempt to answer for himself the question that might have inspired his visit: "What were the earliest handicrafts known and

what materials were used by the oldest craftsmen of human history ? ”

The objects accidentally preserved through the millenniums do indeed easily lead us astray. Too often we forget that only those materials whose very structure made them withstand the decay that comes to everything made of ‘dust,’ be it the flesh of man or the fibres of plants, could survive the ages. Long before the Stone Age another working material, wood, was as abundant as it is to-day and as subject to decay. From the brethren of prehistoric man, from the now extinct Tasmanians, and from the living Australians and their food-gathering relatives of other continents, we can easily learn that at the dawn of time the Age of Wood prevailed. If we assume that the Ages of Iron,



‘LIL LIL’ CLUB

Western South Wales, Australia

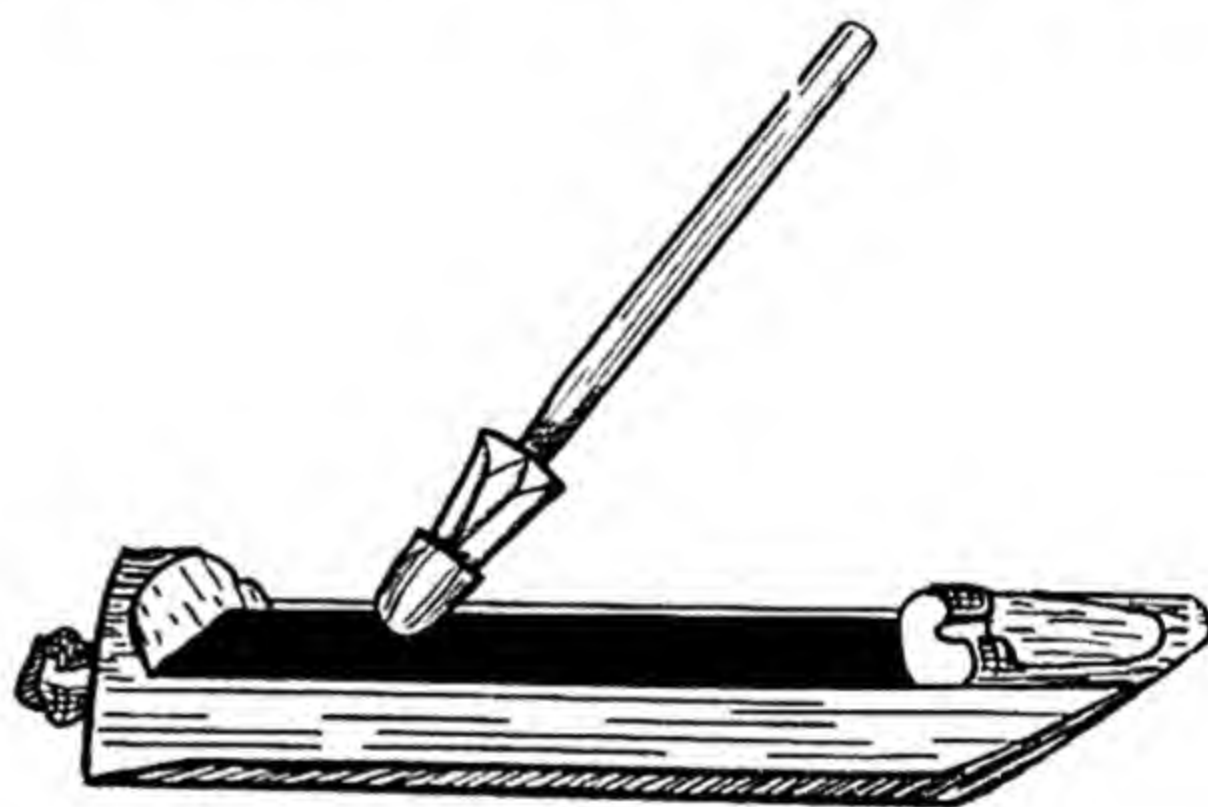
After F. D. McCarthy



WOODEN FOOD-BOWL

Island Truk (Carolines)

Museum of Ethnology, Cologne



WOODEN TROUGH FOR CRUSHING
CASSAVA LEAVES

After G. Tessmann

of Bronze, and of Polished Stone lasted about three thousand years each we can safely state that the preceding Age of Chipped Stone and its probable forerunner, the Age of Wood, extended over longer periods. This does not mean that the functions of wooden tools and implements were in later eras completely replaced by other materials. The contrary is the case, as our modern furnishings show. It only means that wood was the earliest working material available and the easiest to tackle with the existing tools.

The universal use of wood dominated the material possessions of the oldest man, just as is the case to-day in many regions. Since there were available no adequate tools to shape the wood as nature furnished it into pieces of finer carpentry, the working of the more pliable bark assumed great importance, especially when it came to building larger objects like wind-breaks and canoes. Shells, animal teeth, bones and crude stones helped to fashion the desired pieces. It is astounding to see what primitive man could and still does achieve in his woodwork without the benefit of metal blades and nails.



HEAD-SHAPED CUP

Wood

Southern Congo

*Museum of
Ethnology, Cologne*

Many houses of primitive man, even in higher cultures, are joined together by binding. Bark objects are either stitched together with sinews or fibres, or glued and cemented in a surprisingly durable fashion. Large wooden containers, like signal drums or boats, are fashioned from solid trunks and hollowed out by fire.

About the oldest wooden tool of man is the digging stick, his indispensable helper on daily food-gathering expeditions. It is a simple

wooden branch with a pointed end, occasionally forked and often hardened in the fire. Derived from it is the wooden spear which served in the hunt, the other early food-gathering



WOODEN BOWL

Southern Congo

Museum of Ethnology, Cologne

CARVED WOODEN CLOTHES RACK

South Seas

Museum of Ethnology, Cologne

activity of primitive man. The points of wooden spears are hardened over a flame to such a degree that they are sometimes superior to those of flint-stone or even metal. The Asiatic method of soaking bamboo spears in oil and hardening them in hot ashes

results in metal-hard points. During recent uprisings in the Far East such spears have effectively competed with the white man's weapons.

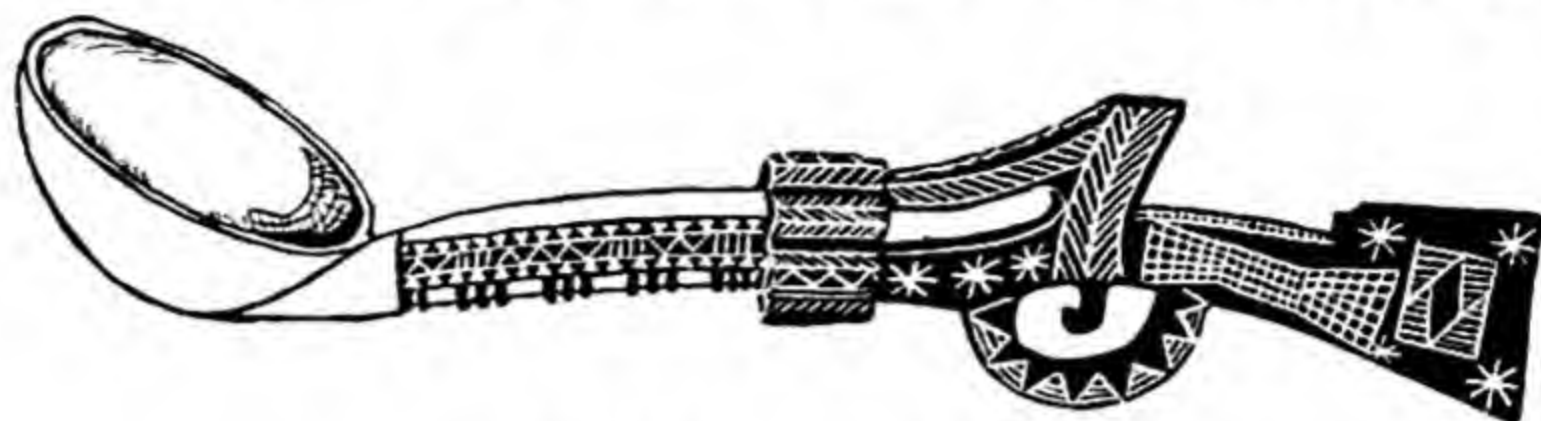
Derived from the parrying stick that warded off a blow, the shield is a later addition to the family of wooden implements. It has undergone many variations of shape and material—as, for instance, the African leather shields. Another multi-shaped weapon is the wooden club, used by all primitive tribes in scores of forms from the simple root or branch to the ceremonial dance clubs of the South Seas, which are painted and engraved and trimmed with tassels, fringes and feathers. Even the Australians have specimens of graceful and efficient shape, decorated with a multitude of geometrical engravings. Their boomerang or 'come-back-club' makes use of a complicated physical principle; with each of its ends on a different plane, it utilizes the principle of the screw.

Most of the primitive household gadgets of wood are not very different from our own. Among them are spoons and ladles, bowls and plates, and the like. Even wooden forks occasionally are used, although in limited areas and not as an ordinary eating tool, but as a ceremonial object. In the three-spiked form it is used among the cannibals of the South Seas for the handling of human flesh. Finger-bowls, trays, and boxes of redwood belong to the equipment of the Californian Yurok household. Head-rests, stools, and large storage-boxes are found among large groups of peoples on all continents, and smartly carved African Tikar sandals have all the ear-marks of elegance and can be compared very favourably with our modern beach models. The magnificent house posts, dance masks, drums, and household containers of Polynesia are all carved without the benefit of metal tools, the only technical aids being shells, coarse fish skins, sand, and pumice. Since the African natives knew about the smelting of iron even before the white man, they have achieved, in their famed bowls, house posts, furnishings, and idols, such perfection of form and workmanship that the native art academies of the jungle nowadays attract students from the white world.

Although the techniques of wood manufacture became more clearly differentiated in the high cultures, especially with the addition of the plane and the grooving of fitted parts, they did not change in principle. The primitive wooden animal trap, bow and arrow, and countless other wooden articles have not only inspired imitation by the white man but have also served often as 'blue prints' for their later manufacture in other materials.

The most easily managed wooden raw material is bark. Bark

built the earliest home of man, the windbreak ; bark makes the baskets and containers of many tribes ; it is to some people the most important material of all. The entire material possessions of



WOODEN LADLE

African Gold Coast

Sammlung für Völkerkunde der Universität Zürich

the Indians of Labrador depend, except for animal skins, on two working materials : bark and wood. They could not obtain the skins of their game animals without the help of their birch-bark



BARK BASKET

Bathurst Island, Australia

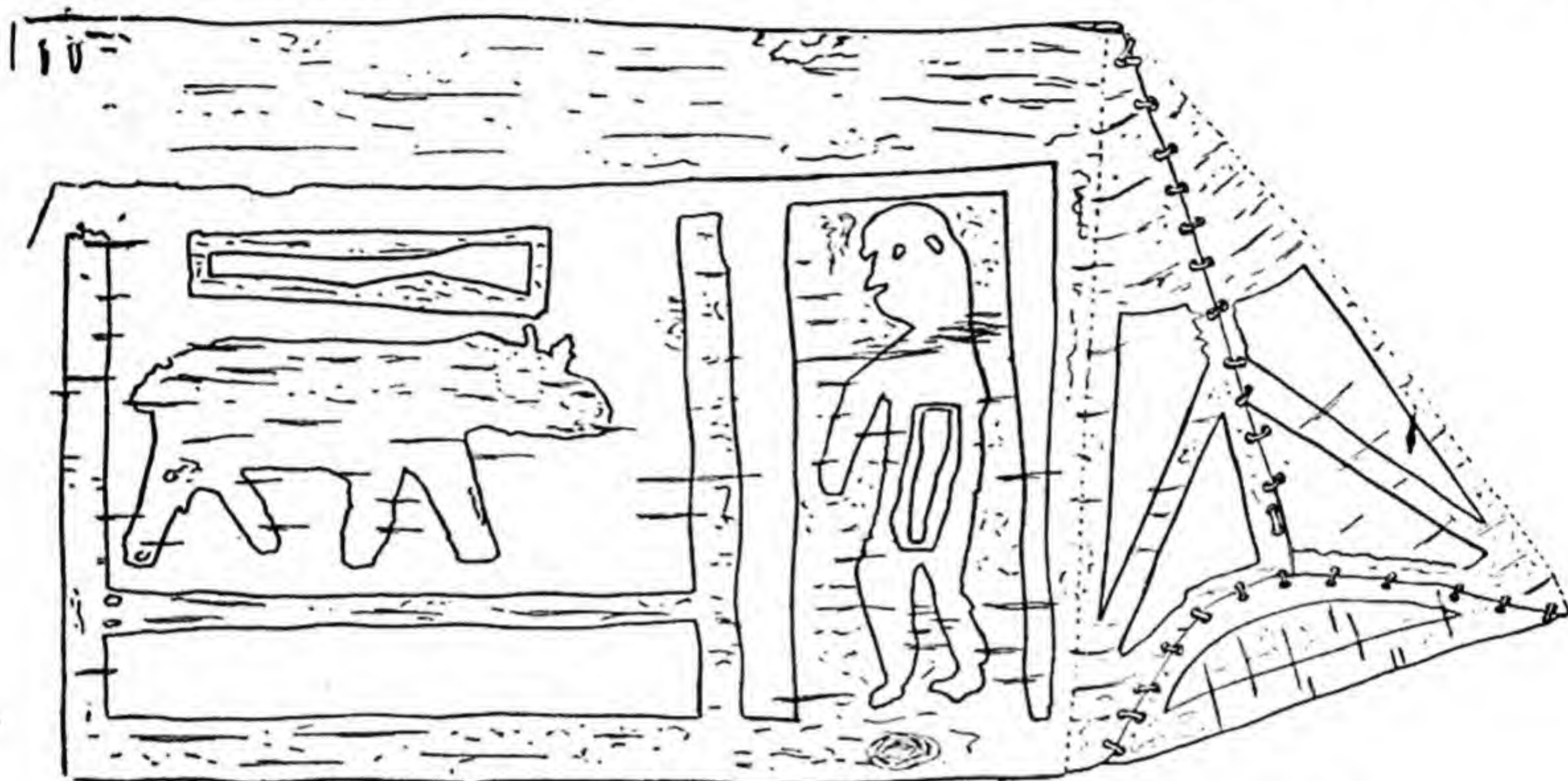
After F. D. McCarthy

canoes and their wooden sleds. Practically their entire household equipment is fashioned from birch bark, neatly 'tailored' in geometrical fashion. This bark is cut with beaver teeth and stitched together with split pine roots, animal sinews, or leather strings. Glues of resin make their vessels watertight, and scraped ornaments depicting animal figures, mythical characters, and geometrical shapes decorate them in a pleasant effect of contrasting dark and light brown. Thickened blueberry jam, bear grease, and the famed pemmican are kept safe from insects, dirt, or moisture in covered containers which are equally sturdy and pretty to look at.

Perhaps the most important use of bark is the transformation into bark cloth by the process of soaking and pounding, which results in a smooth material fit for clothing—a substitute for woven fabrics. This type of bark cloth, sometimes used in the more advanced cultures but unknown to the hunters and food gatherers, is manufactured in Africa and Madagascar. Its most important centres of distribution are in Indonesia and Polynesia, where it is known as

tapa. It may have been from Indonesia and Polynesia that the knowledge of it migrated to North and South America. It was known to many prehistoric peoples of Europe and Asia.

Tapa is manufactured from the bark of trees containing bast, such as the bread-fruit-tree, the fig-tree, and the mulberry-tree. After the bark has been stripped off the trunk it is softened by soaking and then pounded into a light, pliable fabric with the help of special clubs, beaters, or mallets. The finished product is finer



ORNAMENTED PEMMICAN BASKET OF BIRCH BARK

Montagnais-Naskapi, Labrador

Collection Julius E. Lips

in texture than many a product of the loom. In Polynesia it is decorated with multicoloured ornaments of singular regularity and beauty, sometimes painted, sometimes printed on with stencils of wood or bamboo. In Africa the bark mallet is often made from a part of an elephant tusk. Pulverized redwood is beaten in as a dye. The main use of bark cloth is as a material for wearing apparel. The North-west American Indians use cedar bark, which they loosen from the tree with bone scoops and pound with fluted bone beaters. Many of their painted dance blankets are manufactured from cedar-bark cloth, and the bark fibres are often woven into their blankets made chiefly of dog's and goat's hair.

The method of fashioning bark cloth from beaten bast has influenced, if not inspired, the Chinese invention of paper, the earliest samples of which consist of mulberry bast with added plant fibres. It also is responsible for the invention of the Egyptian papyrus, a product obtained by the pounding and gluing of reeds.

Equally ancient as the use of wood and bark for the fashioning of man's oldest belongings is the universal utilization of bone, horn, shells, and animal teeth as earliest tools. In the older Palæolithic Age bone knives, shafts fashioned from horn, scrapers and planes of shell were abundant. Entire prehistoric periods have been

MALLETS FOR THE MANUFACTURE
OF BARK CLOTH



Central Celebes
After
Nordenskiöld



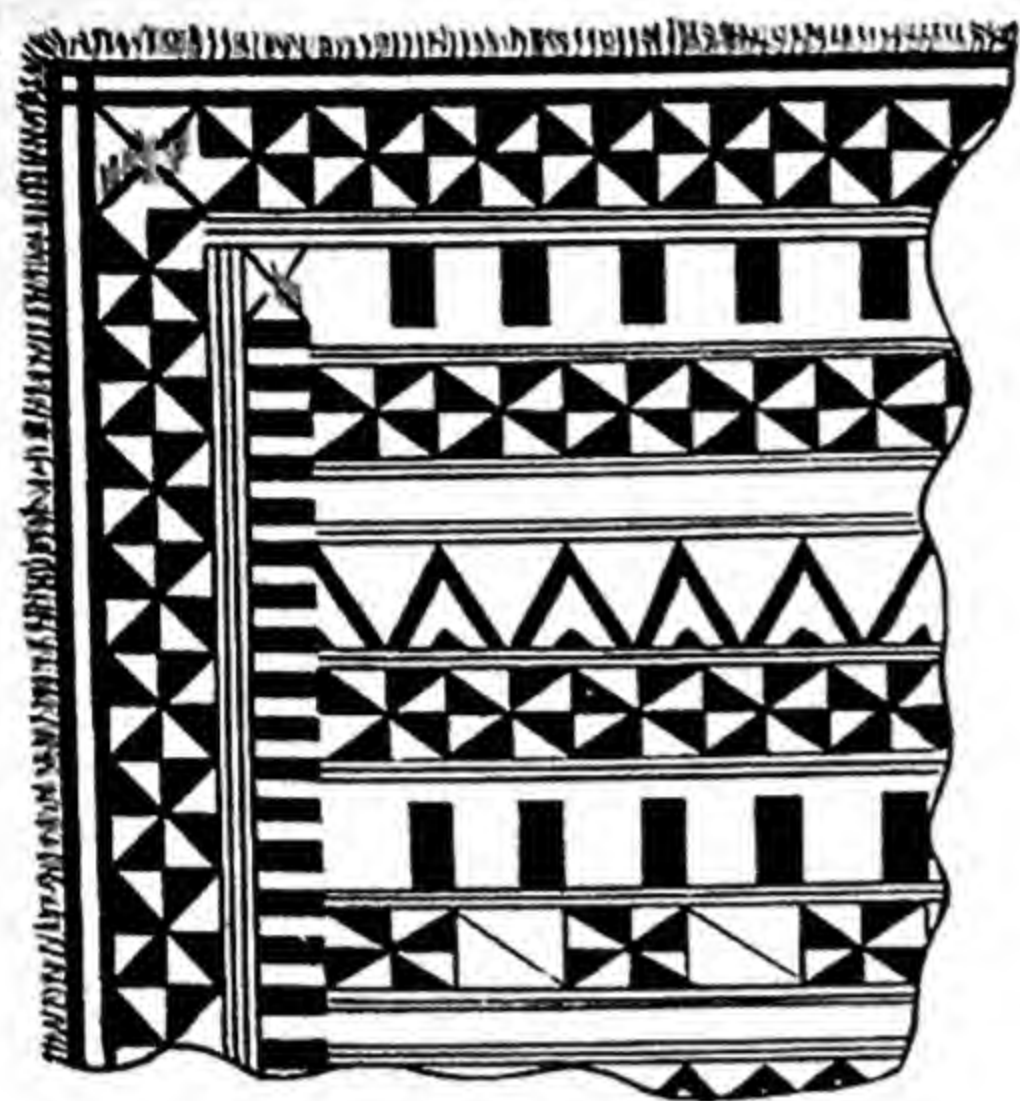
Santa Cruz
Islands
Museum of
Ethnology, Cologne

named after the dominant bone tools of these eras. Sockets of bone joints served as containers for paints and greases. The tooth-studded jaws of the cave bear made effective weapons. Harpoon hooks, awls, spoons, scrapers, and needles were fashioned from bones in exactly the same manner that primitive tribes of to-day utilize the same material for the same purposes.

Bone awls serve to-day's Australians in the manufacture of coiled baskets; pig's ribs are 'needles' on the Santa Cruz Islands; fur scrapers made of thigh-bones are a universal tool of the American Indians from California to Labrador. Bone knives are customary in the jungles of eastern Bolivia, with a monkey thigh-bone serving as a handle and the tooth of the *hochi* hare as a blade. The Canadian hunters have a similar tool, with a

beaver tooth at the work end and a handle of wood or bone. Tools of this type have not undergone any changes in appearance; they are used to-day as they have been since the dawn of time.

The chipped-stone implements among the earliest Palæolithic findings show such purposeful workmanship that we must assume that even they were the results of previous periods of development. The word 'Palæolithicum' itself (from the Greek *palaios*, 'old'; and *lithos*, 'stone') stands for the conception of the age of the 'old' or chipped-stone implements, while the younger 'Neolithicum' is the period of the 'younger' or polished stone tools.



TAPA (BARK CLOTH)
Fiji Archipelago
Museum of Ethnology, Cologne

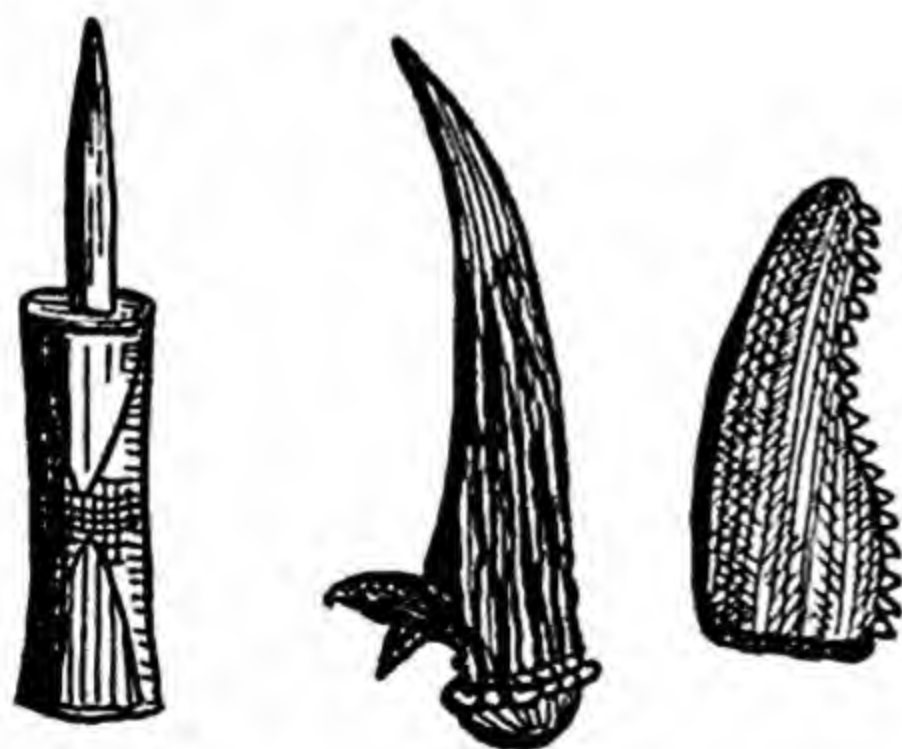


WOODEN
SPEAR-POINT
Clacton-on-Sea
Early Palæolithic
Age
*After Hazzledine
Warren*



PALÆOLITHIC
BONE DAGGER
*After
Lartet-Christy*

BONE TOOLS



Bone Tools of the Fuegians
After K. Weule



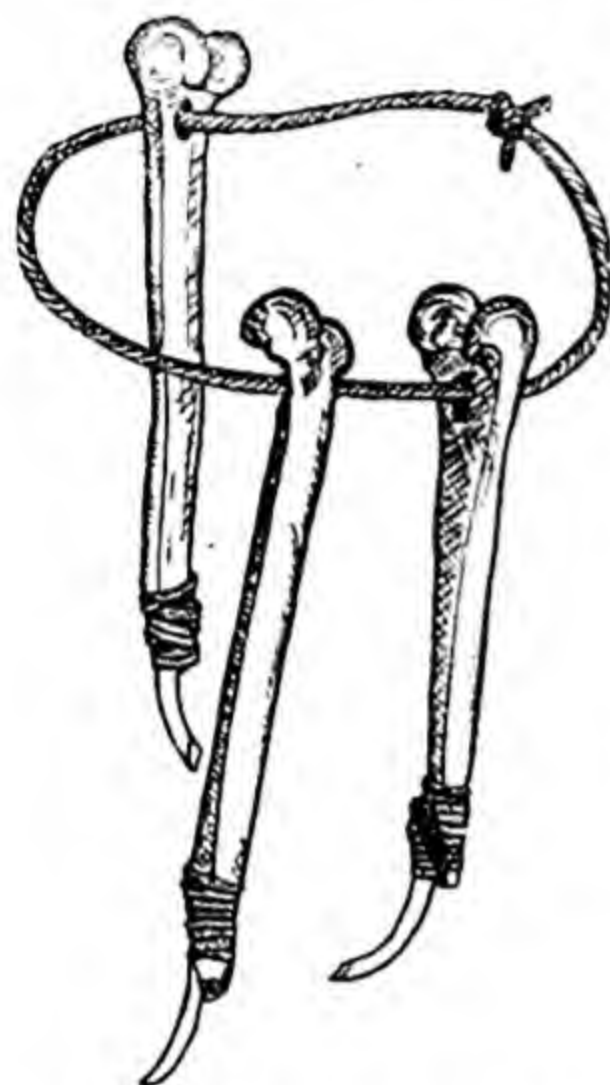
Fur Scraper
(Caribou Leg-bone)
Montagnais-Naskapi
Collection
Julius E. Lips



Neolithic
Bone Needle
and Awl
After O. Menghin

The oldest unpolished stone implements show shell-like chip-pings of great diversity. Their purpose can easily be determined by the shapes man knew how to give them. They were scrapers, scorpers, blades, and the like, whose wooden handles, shafts, etc., could not survive the ages. Arrow points of stone are less ancient.

Stone knives are used to-day by many Eskimo and Indian tribes.



KNIVES KNOWN
AS HIRAZI OR
AIKUDIN

Sirione Indians,
Eastern Bolivia

After
R. N. Wegner



COCONUT
OPENER

Wooden handle
with Tridacna-
shell blade

Bismarck
Archipelago
After Frobenius

They may be hafted, with the blade inserted in a wooden handle and tied or glued in place, or simply made with a smoothed end of the stone itself. The California Indians use unhafted flaked knives of quartz or obsidian for skinning large game and smaller blades of the same stones set in wooden handles for their general kitchen use. The ancient Aztecs used obsidian knives for their religious sacrifice of human beings. The stone knives, still used by many present-day races for their ritual circumcisions, are a surviving reminder of the age of this custom. Stone axes have been found in archæological excavations in South America. Stone saws of the type used by the prehistoric Lake Dwellers of Switzerland are still in use among

primitive tribes. These consist of a wooden base with inserted stone splinters for teeth. Borers of stone are still customary even in the Indian high culture. Stone hatchets are joined to straight or curved wooden handles by cement, putty, or resin, or tied to the shaft with strings.

Another important utilization of stone for household implements are the slabs and grinders on which primitive housewives all over the earth chop and mince their grains and vegetables. One large stone serves as a base, with a smaller, round stone as a pestle. From the harvesting tribes of North America to the agriculturists of Africa and the Pacific Islands, such slabs and mortars are in general use.

Some tribes even manufacture decorative trinkets of allure from

stone. The Tuareg and the tribes of the western Sudan have black marble bracelets of great regularity and beauty.



CHIPPED-STONE TOOLS

Early Palæolithic Stage

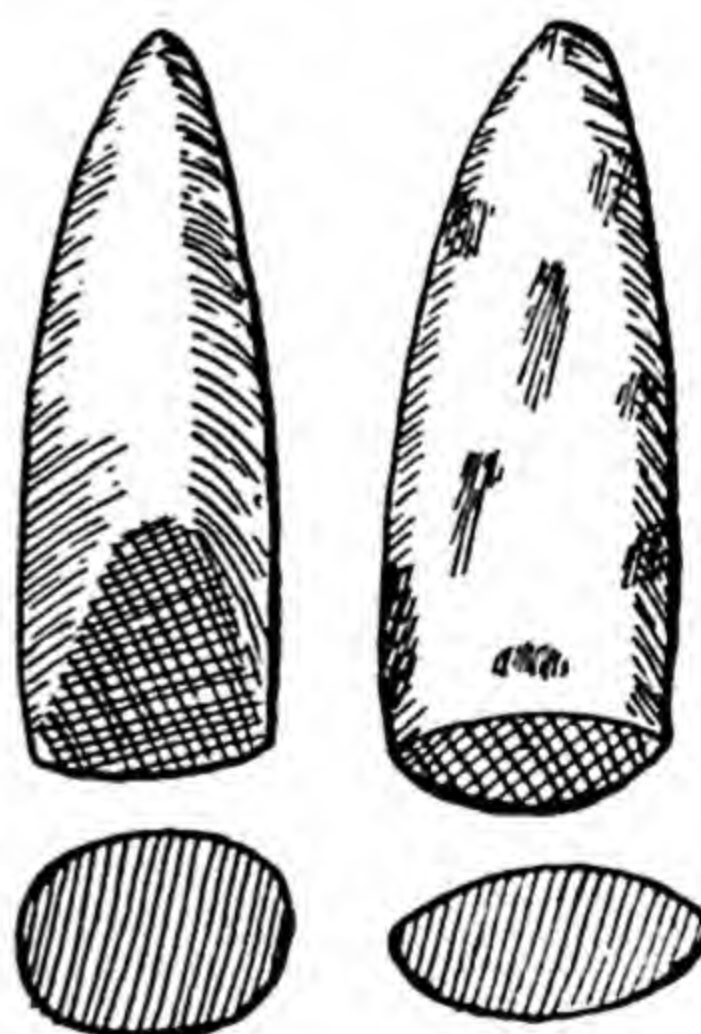
After O. Menghin

STONE POINTS

Younger Palæolithic Stage

After O. Menghin

SPEAR-POINTS

Early
Palæolithic
StageYounger
Palæolithic
Stage

NEOLITHIC TOOLS

Cylindri-
cal HoeAxe-head
of Flint-
stone*After O. Menghin*

The people of Oceania are famed for their precious and artistic clubs of basalt, nephrite and other valuable stones. These implements are often decorated with carved images and serve as symbols

of chieftainship or sovereignty. The dark-green nephrite sceptres of the Maori are among the most artistic show-pieces of our modern museums.

Among the handsomest pieces of native craftsmanship which we can admire during our strolls through ethnological collections are the multi-formed woven bags, baskets, and household articles which even the most primitive tribes turn out with great neatness and accuracy. Although the art of intertwining, interlacing and braiding plant fibres is known all over the world, its centres of perfection are in Africa and the South Seas. The art appears sporadically in the arctic regions, where the lack of suitable materials has led native manufacturing skill into other channels.



STONE KNIFE FOR HUMAN
SACRIFICES

Mexico

British Museum, London

Braiding and interlacing are two of the oldest handicrafts known to man. The different stages of their development can be followed easily. They lead from the simple joining of palm leaves, bast strings, and

grass blades to the final development of the loom and the multi-textured materials the loom produces. Although we speak of basket 'weaving,' this term must not be confused with the art of the loom, which appears only in advanced cultures, while braiding and interweaving are known everywhere.

The simple art of joining plant fibres into regular patterns to produce the many containers, mats, sieves, and other gadgets characteristic of basketry does not require the use of tools other than an occasional awl or needle of wood or bone. About the simplest method of making a fan, for instance, is the mere interlacing of the pinnated parts of one single palm leaf, which makes a pretty and sturdy article. It is used by many tribes of the Pacific Islands and South America.

But by far the most important braided or interwoven objects are the many and varied containers which primitive man uses to collect and store his food and belongings. The very term 'food gatherers' implies that even the earliest tribes needed containers in which to gather and to carry home whatever nature gave them. It is, therefore, not surprising that these peoples put great emphasis on light weight, sturdiness, and efficient shape for their woven containers.

Australian baskets are either simply interlaced or show a quite intricate application of the so-called spiral coil, developed from the sling technique. Reed or grass forms the coil, round which the

bast fibres are wound, and the individual coils are then laced together. Most bags are equipped with strings slung round the



EGYPTIANS HOLLOWING OUT
STONE VASES

Relief in Thebes, 650 B.C.

After Steindorff



MORU WOMAN
GRINDING DURRHA

After Bernatzik

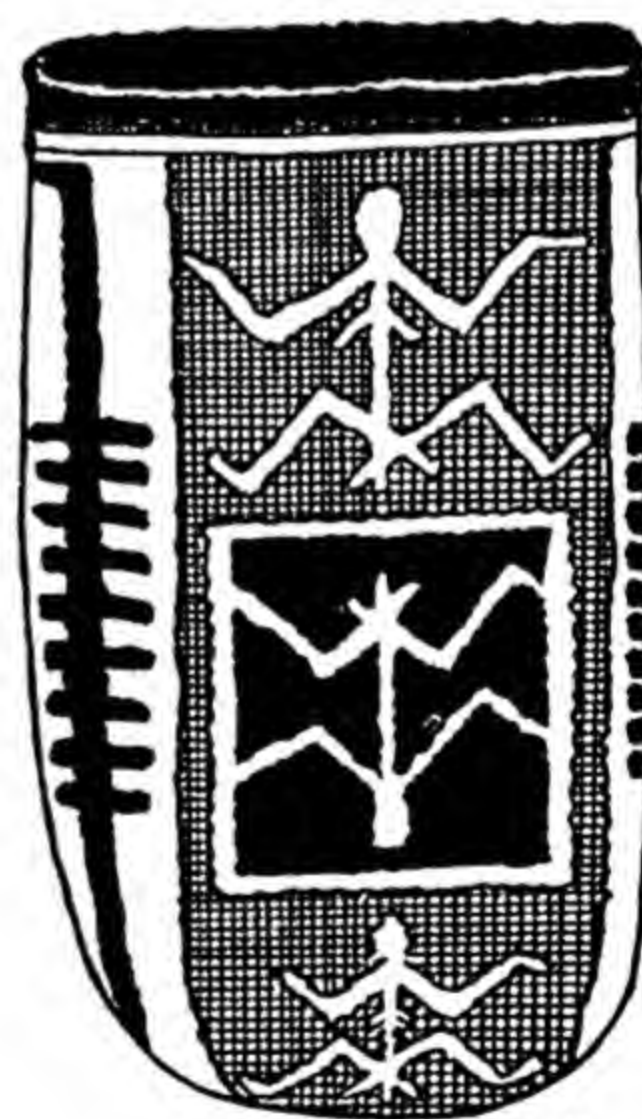
shoulder to keep the hands free for the digging stick. Some tribes, like the natives of Arnhemland, make twined baskets decorated with



FAN, WOVEN FROM
COCO LEAF

Santa Cruz Islands

Museum of Ethnology, Cologne



TWINED BASKET

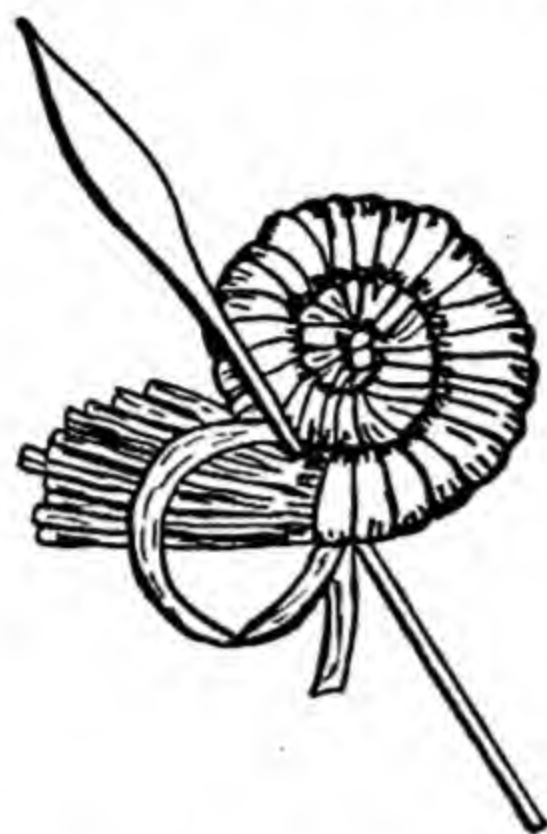
Alligator river, Arnhem-
land, Australia

After F. D. McCarthy

interwoven 'X-ray' patterns in which human figures, lizards, crocodiles, and goannas predominate.

The African Wambutti Pygmies have a practical method of

weaving a basket on the spot where they have killed and cut up a piece of game. In order to carry it home conveniently they immediately set to work to make a handsome basket, more than one yard high, which is fashioned exactly after the pattern of their beehive



SAMPLE OF SPIRAL-
COIL TECHNIQUE
WITH AWL
After Schmidl



SPIRAL-BRAIDING TECHNIQUE
Tierra del Fuego
After G. Montandon

hut. When the basket has reached the desired dimensions they pull the 'hut' out of the soil, turn it over, fill it with the meat, and carry it home.

The Yahgan of Tierra del Fuego know four different kinds of



BASKET FROM YORUBA
Africa
Lindenmuseum, Stuttgart



YUKI BASKET
California
After A. L. Kroeber

basketry. Their different containers are known by the names of the applied techniques.

Among the American Indians the art of basketry reached early heights of perfection—so much so that their woven objects often replaced things which other peoples fashioned of wood or clay, like plates, trays, bowls, cooking pots, and baby cradles. The California Indians especially—among whom basketry is “unquestionably the most developed art”—produce tools and containers of exquisite

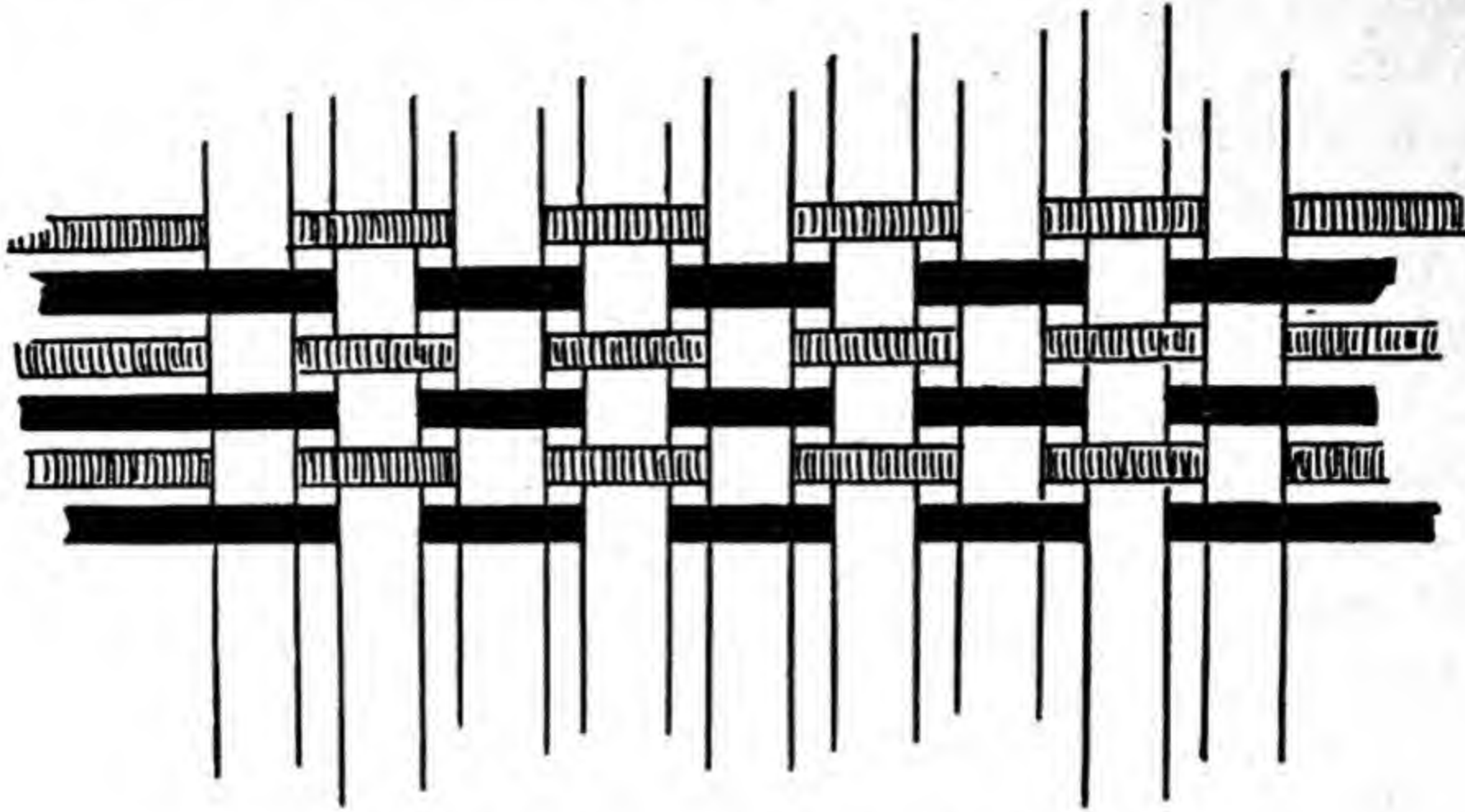
shape, smoothness, and stability, most of them decorated with geometrical ornaments achieved by the addition of multi-coloured materials. While among these tribes the ancient coiling technique is often entirely dispensed with, especially among the northernmost ones and the Yurok and their neighbours, the most characteristic examples of Maidu basketry remain coiled. The foundation of the coils is always three-rod, with peeled willow or unpeeled redbud as the chief materials. In the working process bone awls or sewing splints are used to facilitate the anchoring of the work-fibre between the coils.

The Maidu baskets are mostly two-coloured, brownish-red and white, and measure up to the standards set by the other California tribes, although they are not quite as perfect as the Pomo and Yakut containers. One of their most interesting objects—the seed beater, which is used in the processing of their wild harvests—is constructed of wicker. Tule mats, universal in California, are their favourite pieces of ‘furniture,’ serving as “seats, bed, camp roofing and doors.”

The following variety of Yurok objects listed by Kroeber gives at least an idea of the almost boundless use of basketry products among these tribes: cooking baskets for acorn mush, high round vessels used as general receptacles round the house, storage-baskets of three feet or more in diameter, conical baskets for carrying loads, patterned smaller baskets for gathering wild seeds, seed beaters of coarse openwork, plates and trays of all sizes, decorated small bowls, tobacco baskets often covered with deer-skin, hoppers for the slabs on which acorns are pounded, dance baskets, women’s caps, baby carriers. This list is by no means complete and could be supplemented by the countless basketry objects manufactured by other tribes, especially the Pomo, the Yuki, and the Lassik. Very frequently used is the method of overlay twining. Over a foundation of hazel shoots or conifer roots each weft strand is faced by a coloured one, to produce designs.

Other American Indians, like the Apache, weave baskets of such firmness and fineness that they are practically watertight. For their manufacture, the Apache woman collects willow withes and keeps them in a moist spot to preserve their flexibility. When used they are split and scraped and woven into a circle, with stiff split sticks for a bottom. To make the last openings disappear, the basket is frequently interwoven with buck-skin strips. The resulting vessel is a wide-mouthed storage-jug. The *tus*, or water-jug, gets an additional inner and outer coating with warm piñon pitch. The average size holds about five gallons of water.

Among the most important objects invented by the Indians of South America is the so-called tipiti tube press, used for pressing the juice out of the mandioca pulp. Intricately woven of diagonal

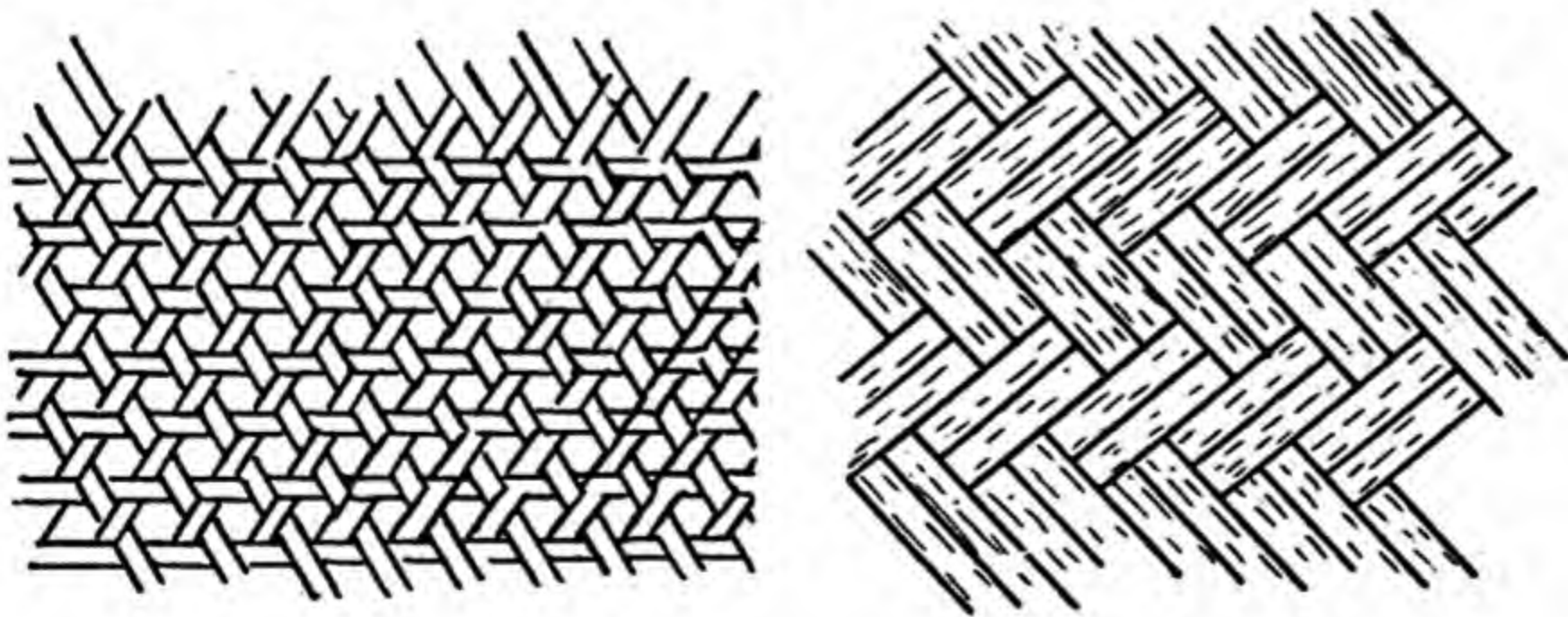


PATTERN FOR CROSS-WEAVING

Dutch East India

After Lamster

fibres, it contracts when pulled at both ends, thus extracting the juice completely from the pulp. The Xingú river region is rich in many other products of basketry, besides the tipiti. These pro-



BASKET-WEAVING TECHNIQUES

Dutch East India

After Lamster

ducts range from the large baskets of interwoven palm leaves to tiny quivers for blowing darts, fire fans, covered boxes, and large-burden baskets.

Other centres of basketry are in Indonesia and the Pacific Islands. Many techniques are known in this region, from the ancient coiling of liana and rotang fibres to woven sandals and fans and fine carrying

baskets. In the Santa Cruz Islands, the latter, for instance, are overlaid with ornaments and tassel trimmings, and their appearance is indistinguishable from products of the loom, although they are hand-plaited without any other technical aids than delicate fingers and extreme dexterity. The 'netting-without-a-knot' technique is used with equal skill for basketry and produces bags of great strength and flexibility. Pacific cooks make use of hand-woven tent-like structures which they drag over the open fire in the event of a cloudburst. The braided mats of the South Seas are too well known to be mentioned here at any length.

The basketware of Africa is world-famed and of such great variety that many volumes have been filled with descriptions of their shapes and ornamentations. From the huge fences of interwoven grass to the burden baskets of smooth liana braid; from the thousands of household containers, bowls, sieves, and trays of raffia to the tiny square sun roof which protects the sleeping baby, human craftsmanship and imagination have produced thousands of forms so efficient and so beautiful that only a trip to a museum can provide even an idea of their unsurpassable artistry. In the Cameroons and elsewhere whole houses may be roofed with finely woven mats, and entire village streets are screened off with sturdy woven walls.

Another use of the plant fibre is in the form of cords or twine, binding materials which play a paramount rôle in many primitive cultures. Snares and nets consist of strings; wooden poles are tied together to build a house. Whether the plant fibres are obtained after complicated rotting processes or twined and twisted together in their original state, they are among the most important materials of most primitive cultures. The shark snares of the Santa Cruz Islanders are strong enough to hold the huge prey.

A charming tale of the Pangwe explains the fact "that the animals enable man to kill them" by their failure to destroy man's plantations, which supply the fibres used in manufacturing fishing cords, snares, and nets. The Tikar of the Cameroons cultivate a hemp species that furnishes the thread for their sturdy tows and nets, and their own cotton furnishes the raw material for the finely braided bands on the aprons and baskets used by their women.

Even human hair may serve as a material for strings and braids. The Australians manufacture hair bands of human and opossum hair and braid belts and necklaces of the same material. No Australian mother-in-law has the right to refuse to her daughter's husband the privilege of claiming her 'crowning glory' when he wishes to manufacture from it some strings or braids. The New Caledonians decorate their chieftains' caps with long strands of

braided human hair, and the natives of Assam trim their spears with similar cords. On the Melville Islands belts, bracelets, and headbands, often interwoven with feathers and plant fibres, are valued pieces of 'jewellery.' The native warriors hang balls of yellow feathers on strings of human hair around their necks to bite into during battle, like modern boxers who brace their teeth tightly on mouthpieces during a fight.

Although all of this plaiting, braiding, interweaving, and basket-work is characterized by the fact that the human hand alone does the entire work, without any other help than an occasional awl, other manufactured goods call for the use of additional tools like the netting needle of wood or bone and a small board over which meshes are slung. A large work frame is the technical stand-by of many native braiders. The Naskapi, for instance, manufacture on it their exquisite 'rabbit-skin blankets' from cords of moistened fur coils, diametrically cut into strips. The blankets have the appearance of a large fur robe of one piece, but in reality are nothing but a network of interwoven single strips.

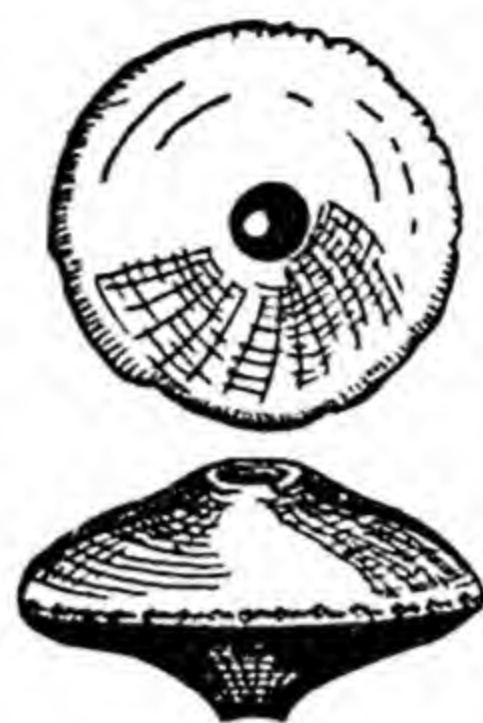
The fur blanket of the Maidu of California, for instance, is of simpler workmanship than the type I observed in Labrador. The Maidu knot their fur strips into one long strip which they "wind back and forth between stakes to form a vertical plane of horizontal warps. Into this the continuous double weft, two lines of the same material, are twined alternately up and down and knitted to the outermost warp on each turn." The Labrador Indians use the much finer technique of crocheting with a wooden needle over a frame. This produces a completely regular blanket, with tiny invisible air holes between the coils of fur that give it great insulating value. Other California tribes weave cord blankets with feathers knotted into them.

Whoever sees the finished products of these techniques is impressed with the regularity, smoothness, and neatness of its texture which has all the fine qualities of delicate handiwork. However, no regular weaving was possible without the existence of a thread better perfected than the short, twisted coils or cords of old.

The desire to obtain a long, fine thread of equal thickness required the invention of a new tool—the spindle. The simple stripping and cleaning of the fibres or, more technically, their scutching, and their loosening and straightening out, or carding, are known to many cultures. But regular spinning requires also, in the words of Hooper, "the drawing of the carded filaments out in an even rove and twisting them together into fine or coarse continuous thread." The same author gives a good definition of

the spindle when he says : " If a small stick, having a hook at one end and a weight at the other, be suspended to the spinning thread, the further even twisting of the yarn will become much easier, because regulated by the continuous revolution of the weighted stick or spindle, as such an appliance is called."

As soon as man began to settle down the spindle appeared among his most important tools, and we can actually say that the invention of agriculture and the appearance of the spindle as a cultural element are closely interrelated. The oldest findings from the times of prehistoric man show that weaving equipment existed in every household of the earliest settled tribes. The clay whorls found in the lowest layers of the Anau culture at Merw in Transcaspia go back to about 3500 B.C. Similar specimens were discovered in the ruins of Eridu (the Abu Sharein of to-day) and in the so-called Sesklo culture of prehistoric Greece, as well as in



NEOLITHIC
WHORL
Found at
Knossos



PREHISTORIC
SPINNING
WHORL
Thessalian
Sesklo-Culture

After O. Menghin



SPINNING CHIMANE
INDIAN WOMAN
Bolivia

After Nordenskiöld

the remnants of the Cretan Neolithicum. Especially numerous are the loom weights and spindle whorls found in the homes of the ancient European Lake Dwellers, where even parts of looms, frames, and thread-twisting machines have been preserved through the millenniums, together with fragments of mats and woven linen cloths. The primitive spindles of our time are still exactly like those earlier specimens which were also used in the ancient high cultures of Egypt, India, and Peru. No Peruvian noblewoman left her home to go visiting without a maid behind to carry a basket

containing her spindle and other gadgets necessary for needlework.

The facts show that the loom, which was developed from the braiding techniques, is an invention of women. Men became weavers only in the younger cultural stages, when trades and skills began to be specialized. The form of the loom is derived from the braiding frame with its simple series of parallel strings or warp,

through which the work thread or weft is alternately laced. The natives of Melanesia and of tropical South America, also many North American Indian tribes, braid head-bands, sashes, garters, and belts on this type of simple frame. The lacing needle of bone or wood is the forerunner of the weaver's shuttle and reed.

As to the forms of primitive looms, they are of such great variety that their analysis would be a study in itself. The anthropologists Chapple and Coon have divided them, according to their mechanical principles, into three main groups: the one-bar loom, a wooden cross-bar suspended between two poles; the two-bar loom, in which the warp threads are stretched between two fixed bars, mostly used in horizontal position, with needles operated by foot treadles; and, finally, the high-culture two-beam loom, which introduces revolving cylinders and allows the manufacture of cloth of unlimited length. The last adds so many improvements that it can indeed be regarded as the model after which the modern industrial loom has been fashioned.

These hand looms, then, are the machines used to weave the delicately textured fabrics which so often are of better quality and workmanship than the products of our own factories. The unhurried manner of their manufacture, the inwoven patterns of mysterious age and significance, and the mellow, subdued natural colours produce effects of lasting quality and beauty.

Weaving looms are limited to certain relatively narrow regions of the globe. The loom appears comparatively late in the array of man's material possessions. It does not occur in the otherwise highly developed Polynesian cultural circle. With the exception of south-western United States where the Pueblo and Navaho are famous for their multi-coloured woollen blankets and materials for wearing apparel, the loom did not penetrate the North American Indian cultures. It is also absent from South Africa, the steppes of Asia, and from the arctic regions, where felt and animal skins are substitutes for woven fabrics.

The logical development of the loom from the art of basketry is indicated by the earliest materials used for threads. They are all plant fibres: banana bast, nettles, hemp, and cotton in the hot regions. Woollen cloth is of much later origin.

Among the best African weavers are the Tikar of the Cameroons, whose cotton loin-cloths, dyed with redwood, are of striking appearance. The large robes of the Hausa chieftains and others feature colourfully striped ornaments; and the cotton-padded 'Phrygian' caps of West Africa are examples of finest workmanship.

In addition to their delicately braided sleeping and 'money'

mats, the natives of Melanesia weave loin-cloths of banana fibres, mostly decorated with fringes and with hemstitched borders of exquisite symmetry.

The multi-textured materials woven on the looms of the ancient high cultures are masterpieces of art and precision. The Peruvians of pre-Columbian times, whose religious ritual required the offering to their gods of woven masterpieces manufactured by the Sun Virgins, produced pictorial pieces like tunics and shoulder-throws whose patterns told whole stories or celebrated sacred figures like the jaguar demon or the zigzag snake. Spear throwers and flying birds decorate their ancient garments. Shirts, belts, and fringed sashes found in their prehistoric graves show a perfection of weaving which surpasses the much younger products of the great Parisian Gobelin. The magnificence of the Egyptian fruits of the loom is known from the findings in the Valley of the Kings; the Chinese gold damasks, the Persian velvets, the Coptic 'Turkish towels,' all made on hand looms, cannot be equalled by modern imitations.

In spite of the magic of modern textiles and recent triumphs of the laboratory, one ancient fabric has remained the legendary masterpiece of the ages. Lives have been risked, spent, and sacrificed to obtain the secret of silk, so jealously guarded by its Chinese inventors through millenniums. The princes of old and the potentates of the Churches craved it for its regal splendour, and even to-day the words 'genuine silk' overshadow by far the chemical glamour of nylon and its derivatives. About 200 B.C. the Koreans succeeded in discovering the details of silkworm raising, and the knowledge of the technicalities behind the Divine Fabric penetrated slowly to Japan and to Inner Asia, finally reaching Persia and Tibet. It was not until the sixth century A.D. that Justinian introduced it in Byzantium, and it was only after this that the Greeks succeeded in adding the knowledge of 'silk raising' to their arts. No primitive tribe can claim the invention of silk or has been able to manufacture it. The road of silk is the road of civilization.

While the art of weaving goes back to the ancient knowledge of braiding and of basketry it is not the only skill developed from these old techniques. A younger sister of the art of basketry, also invented by women, is the manufacture of pots and vessels out of clay—ceramics. Although the materials of basketry and of pottery are completely different, the manner of shaping containers from both is kindred indeed.

One of the most ancient methods of making earthenware, the fashioning of receptacles from clay coils, goes directly back to the spiral-coil technique of basketry. This, however, does not imply

that the tribes familiar with the oldest braiding techniques are necessarily also potters. Like the weaving loom, the art of pottery does not appear in the material culture of man before the stage of agriculture has been reached. The roaming tribes of earlier complexes had neither the time nor the opportunity to develop handicraft patience and working conditions of sufficient stability, nor could they easily transport the fragile ware whose use is beneficial only to permanent households.



CRUDE EARTHEN-
WARE CUP

Found in a Mound
near Lodi, Calif.

After Nordenskiöld

As to the invention of pottery, the general assumption is that it developed from the habit of plastering woven containers with cement or clay to render them waterproof, and that the usage of such vessels on or near the fire suggested the idea of shaping them from clay without further dependence upon the original basket. This assumption may be correct. We have no means of knowing to-day. But although this story of development may hold true as far as sun-dried clay containers are concerned, it is more than doubtful whether baked earthenware can be regarded as of similar origin. A scientist of the distinction of Nordenskiöld calls the idea 'preposterous.' He believes that such accidentally baked pieces of plastered basketry would by no means turn

into baked earthenware, but rather into 'a rubble of burnt clay,' and suggests that a knowledge of the washing and the preparation of the clay and the shaping of initial tiny bowls must have preceded the 'building-up methods' applied in the manufacture of larger vessels. This example of divided scientific opinion on the origins of pottery serves perhaps best as an illustration of the challenging nature of such problems.

Ceramic-making tribes have different methods of processing clay, according to the consistency and composition of the soil they have at their disposal. The clay is cleaned and dried. Dirt particles are removed by sifting. If the clay is too 'fat,' it is mixed with binding materials like sand, grit, ashes, or even tiny particles of wood or grass. In South America the application of sponge spicules in the clay was an independent Indian invention. If the 'dough' has gained a smooth mouldable consistency it is ready for the working process.

The shaping of containers in the different regions of the world follows five principal methods—four of them primitive, one characteristic of the high cultures exclusively.

The simplest and crudest way is to take a lump of clay and gradually press down its central part, which raises the outer sides. In this rough shape the outer sides are beaten with a piece of wood while a stone is held against the inner part to counteract the pressure of the beating. The Papua of New Guinea, who also have other methods, make most of their pottery in this manner.

The spiral-coil technique uses one long coil of clay which is built up from the bottom in circular fashion until the desired height has been attained. The inner and outer sides of the pot or bowl are then smoothed out with the aid of a stone or a piece of wood.



SPIRAL-COIL POTTERY
South-east Coast of New
Guinea

After Hurley



COIL POTTERY
Baila, North Rhodesia

Very similar is the method of building up a container from a series of rings. Each ring is larger than the one previously used, with the smallest forming the bottom and the largest the upper rim. As in the coiling technique, the contours of the rings are then smoothed together.

The fourth method requires the initial shaping of a round clay bottom, to which a number of side flaps are attached. These are built up and worked into each other by a slow turning of the vessel.

The fifth method, which alone is the exclusive invention of the high cultures, makes use of a mechanical device, the potter's wheel, whose invention, as the invention of all wheels, was revolutionary in so far as its mechanical principle has no equivalent in nature. To think it out was a triumph of human imagination independent of the imitation of phenomena observed in nature. The revolving potter's wheel was known in Egypt before the beginning of the third pre-Christian millennium; the craftsmen of Crete used it

during the oldest stages of the Bronze period, and it was known in many parts of India. Its first European appearance was about 500 B.C. in France and southern Germany. It was unknown on the entire American continent.

Primitive earthenware is baked in an open fire, and many vessels and containers are beautified with engraved or painted ornaments. The knowledge of the glazing process is reserved to the high cultures.

The natives of West Africa have an interesting method of engraving patterns into the smooth clay of a vessel. A wooden stick is carved in very sharply contoured patterns and rolled round the container in such a way that the ornaments are pressed into its surface in a regular and symmetrical fashion. More complicated patterns can be obtained by a crosswise application of the wooden stencil. In the Cameroons the pots decorated in this manner are dried for a few hours and then burnt during the night. The result is earthenware of great sturdiness and attractiveness. The West African vessels vary in size from small bowls to round cooking pots of great dimensions.

Among the North American Indians only a few tribes like the Pueblo and the Hopi are expert potters. But their great art has declined during the last several centuries. The spiral-coil pots of the cliff dwellers featured striking black ornaments, and the multi-coloured earthenware of the abandoned Hopi cities were masterpieces. To the California tribes the art of pottery is almost a forgotten skill; modern Indians must consult their grandparents to learn how the vessels which are still in use were originally created.

The South American Indians are the inventors of pots with hollow rims. In stoneless regions they had an ingenious method of replacing the stones originally used for stone cooking (by heating a stone in the fire and putting it into the food-filled container) by clay balls. These Indians also fashion clay pipes of peculiar shapes. A study of the earthenware pipes of man would lead one all over the globe, from the jungle to the parlours of old Holland.

The ancient high cultures, especially of Persia, India, Egypt, Mexico, and Peru, have contributed the most perfected examples of ceramics. Magnificent water-jugs, often in the shape of human heads or figures and comparable to the English Toby jugs, have been found, especially in the graves of Peru. The museums of the world are filled with countless examples of earliest ceramic art.

In the science of prehistory the manifold shapes of ancient pottery have even served to name cultural periods according to the

forms and ornamentations of the earthenware manufactured by the artisans of the particular times.

While the Stone Age craftsmen of the Palæolithicum—hunters and food gatherers—could not advance to the art of pottery, the Neolithicum, the age of the earliest agriculturists, abounded with ceramic products of exquisite shapes and decorations, and its three principal periods obtained their names from their pottery. We speak of the Neolithic periods of 'corded ceramics' (*Schnurkeramik*); of 'bell-shaped cups' or 'zonical cups' (*Glockenbecher, Zonenbecher, vase a campana*); and of 'band ceramics' (*Bandkeramik*). Remnants of these have been found in northern and central Europe, on the Iberian Peninsula, in Italy, France, Great Britain, and the ancient Danubian cultural centres.

But the modelling of clay, even in the earliest times, did not serve only practical purposes. The shaping of human figures from moulded clay, whether for the sake of magic or mere æsthetic joy, was practised by primitive man in central Europe as early as during the Aurignacian, and animal idols and statuettes, especially of women, abounded in the Neolithic Age as a parallel feature to the beautifully ornamented vases, spinning whorls, clay stencils, and the like.

In the ancient Egyptian tombs multitudes of clay figures and clay



WATER-JUG

Clay

Peru

*Museum of
Ethnology, Cologne*

PRINCIPAL GROUPS OF NEOLITHIC CERAMICS



'Corded' Ceramics

'Zonical' Cups

'Band' Ceramics

After Déchelette

tools and gadgets have been found. These were meant to serve the departed in the other world. Hundreds of them are among the treasures of the British Museum—from the tiny plates of clay filled with symbolic fruits and vegetables to the multitude of symbolic figures and amulets.

The climax of ceramic art was reached with the invention of porcelain, another gift of high culture which China has added to

the material possessions of man. Its first appearance can be dated back to about A.D. 700. Porcelain originated from the desire to create a substitute for the precious nephrite plates and dishes of the oldest times, which the earliest specimens of Chinese porcelain imitate as closely as possible in shape and colour. Hence the oldest chinaware is not white, but green, grey, or bluish, in the shades of the cherished and valuable stone. The desire for thinness and fragility was developed much later, when the porcelain was no longer regarded as an imitation of the nephrite but became cherished on its own merits as a material capable of producing shapes of utmost delicacy and fineness.

Even to-day the Chinese porcelains manufactured especially in the ateliers of Chingtehchen (Kiangsi Province) are about the most valued in the world. At all times porcelain has graced the tables of the mighty. It was one of the first concerns of the Japanese invaders of the Second World War to carry off as many of the treasured Chingtehchen pieces as possible. When victory finally came the Chinese government commemorated the event by ordering a special series of bowls and vases from the artisans of Chingtehchen, as a national gesture to mark the resurrection of the glory of China.

But the raw materials of the mineral and the plant worlds have not alone been utilized by man to fashion things he needed or wanted. The animal world has its equal share in primitive industry. Besides the horns and bones which were shaped into tools, the skins of hunted animals have provided very important additions to the material possessions of humanity. We saw that among the oldest tools uncovered in the prehistoric findings were fur scrapers, skinning implements, and the like. It is certain that the ability to skin animals is among man's earliest skills.

Although the knowledge of skin tanning, dressing, and currying is by no means known to the most primitive tribes, the Australians sew animal skins together with kangaroo sinews to fashion them into garments where the climate is rough. The South African natives wear crude versions of fur coats, and the indispensable stand-bys of the Fuegians are their wraps of guanaco fur and their large sleeping blankets of the same material. The entire African East Coast, from the southern tip of the continent up to the equatorial forests, uses animal skins for various purposes; and certain regions of the Sudan can be regarded as regular 'leather provinces.'

While animal skins are utilized on all continents, the treatment of the raw hide to turn it into leather of greater or lesser smoothness and pliability varies considerably. In this field the herdsmen are

the best artisans, but the arctic and subarctic hunters and the tribes of Inner Asia also know how to get the best use of their animal skins. For simple water containers, tent covers, carrying bags, etc., they merely scrape off the meat and sinews from the flesh side of the pelt, but whenever smooth leather is needed for the manufacture of garments, moccasins, caps, and the like, the hair must be removed. The cleaning is done with fleshers of stone, bone, slate, or shells, often with the help of a scraping beam, whereupon the removal of the hair can begin. Although some tribes simply pull out the furry parts, others soak pelts in water to detach the fur.

Among the various methods of removing hair is that of burying the skins in the ground, often with the addition of ashes or leaves, as in Africa, or of soaking them in a yucca concoction, as in California. Soaking in urine is an arctic method which also was known to the ancient Greeks and Romans. After any of these treatments it is easy to pull out the loosened hair either by hand or by rubbing the skins over a tight rope, as is done in many places in Africa. The Naskapi lace skins into a vertical frame and work on them with the thigh-bone of a bear or a beaver tooth.

Although the art of currying animal skins with salt, alum, and other minerals is a high-culture invention, the primitive manufacturers of leather know many methods of making it pliable and smooth. Fish oil, moss, and animal brains or livers are worked into the skins, followed by rolling, pounding, wringing, and other manipulations. The old explorer Mason is only too accurate: "Human muscle is the chief ingredient in aboriginal tanning."

Primitive methods of dyeing prepared skins are very numerous. The caribou skins which the Montagnais-Naskapi use for their moccasins have, after processing, a snowy-white appearance and are exceedingly smooth and flexible. To make them more practical for wearing, these soft skins are dyed to a mellow brown over pails filled with smouldering wood particles. The leggings and moccasins of the Blackfoot Indians were smoked similarly over oak rind, which caused their black colouring and gave the wearers their name. A leather-dyeing method of the Eskimos is to 'chew' the juice of the purple snail into the prepared skins, which produces a beautiful red colour. The bark of the white maple mixed with yellow ochre makes the blue dye of the Omaha; cactus juices were used by the leather dyers of the prairies, and the deep-red colour of the African Hausa and Mandingo is obtained by treatments with the bark of the mangrove-tree.

While these practices aim at the utilization of cleaned animal

skins, another important industry concerns itself with the hair removed from pelts exclusively. This is the art of felting. It is most important to the peoples of Central Asia and to the tribes of the Sudan. In Tibet it has reached especially high perfection. The pelts used are the skins of the yak, whose leather, always uncured, provides the material for boots, saddles, and harnesses. For felt-making the yaks are shorn. Since animal hairs have tiny hooks they have a tendency to stick together when properly treated. The carded fibres are spread out, moistened, and compressed, and joined so firmly that a fabric-like material, sturdy and waterproof, results. The finest felts of Tibet are as thin as veils. If thicker felt is desired for coverings of the winter tents or for saddle paddings, boot linings, flooring, and other equipment, additional layers are pressed and rolled upon the previous ones.

It is interesting to note that most wool-producing peoples do not spin the fibre into cloth and that the manufacture of felt is older than the weaving of animal hairs into fabrics.

Plants, minerals, animals contributed to man's early industries ; but his skill enabled him to penetrate into the surface of the earth to discover copper and iron ores ; to learn the secret of the gold-bearing rivers ; to melt different metals for producing alloys ; to erect furnaces in the wilderness. The capacity for making metal tools brought a fundamental change to the trades inherited from earlier ages. New possibilities of construction and of conquest arose. New independence, new inventions, new industries, strengthened the power of man.

The Iron Age, of which our present age of steel is merely a late phase, began in Europe three thousand years ago, when the knowledge of iron manufacture penetrated the Mediterranean regions. In China, however, the metal was already mentioned in the records of the administration of the Emperor Yao during the year 2357 B.C. In Egypt it was known in 2800 B.C., although there it ranked as a curiosity until 1600 B.C.

Despite this respectable age, the discovery of iron is the youngest branch of metallurgy. It was preceded by the Bronze Age, which developed from the knowledge of copper manufacture.

When we think of the ancient metals our imagination likes to dwell on the treasures of silver and of gold that came from Egypt and Ur, Bolivia and Colombia ; the legendary riches of vanished kings and empires which have been brought to light in the Valley of the Kings at Thebes, in Persia, in Greece, and in Mexico. Although the ancient high cultures abounded in manifestations of

wealth and luxuriant art unknown in our time, their golden cans and vases, necklaces, nose and ear ornaments, idols and luxuries, were not an expression of a very high living standard for all, but rather of the privilege of the very few, whose riches were created amidst the frightful poverty of the many. We can be sure that the goldsmiths of the Chibchas who shaped silver and gold vessels for household use and who soldered gold wire on the golden masks and ornaments were as poor as the slaves who mined gold for the Egyptians. All the artistic treasures of the ancient empires could not have been created, however, if the right tools had not existed.



GOLD SMELTER

Ancient Egypt

After Rosellini

WINGED IBEX

Handle of a Silver Vase:
fourth century B.C.*Louvre, Paris*

Copper and bronze were the oldest metals shaped into tools. They go back to the end of the Neolithicum and mark the beginnings of the Bronze Age, when the art of mixing copper with tin into a new alloy—bronze—was invented. This technique was known in Crete as early as during the end of the fourth pre-Christian millennium, but it was spread over so many other regions of the globe that the location of its first appearance cannot be determined to-day.

Five thousand furnaces stood on the plateaux around Potosi in the bronze-manufacturing regions of ancient Bolivia. And in China the bronzes of the Shang Dynasty (1766-1122 B.C.) followed in their execution the firmly established rules of artistic tradition. After millenniums of burial in the tombs of China, these bronzes have assumed the classic patinas of "pure blue as the plumage of the kingfisher" or "pure green as the rind of a melon," which only very

genuine and very pure bronzes show when continuously exposed to water or to air.

When we think of primitive metallurgy, however, we look in the direction of Africa, because it was from there that astounding

evidences of perfected metalwork have come since the discovery of the Dark Continent. When to-day we find bracelets, tools, and ornaments cast in bronze by the tribesmen of Adamaua, Nigeria, and Togo this is merely a last reflection of the glamorous African period of the so-called *cire perdue* process, which reached its climax in the bronze-relief plates and the magnificent human



IRON FURNACE

Tanganyika, East Africa
After Schmidt-Koppers

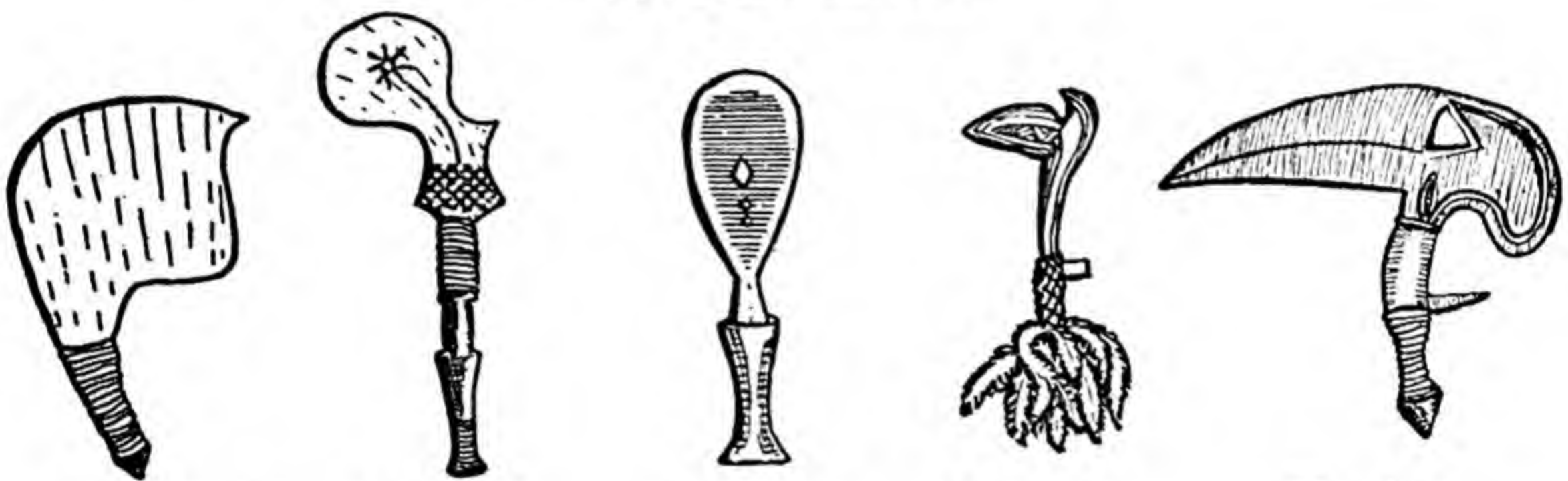
and animal statues adorning the palace of Benin. Judging from the appearance of the costumes of Europeans often depicted in these works of art, this industry of West Africa was at its height during the sixteenth and seventeenth centuries.

The technique of the *cire perdue* begins with the shaping of a wax model of the figure to be cast (shaped around a clay kernel for larger objects), which is then coated with a layer of brick meal or sulphate of lime. When this has been dried air holes and cast openings are drilled. The mould is then exposed to the fire which melts the wax. It can now be filled with the liquid metal. The resulting statue or relief is completely free of any casting marks and can be completed with the help of files, hammers, and puncheons.

The Benin pieces all show delicately engraved backgrounds with floral and geometrical ornaments which might have aroused the envy of Benvenuto Cellini, that great Renaissance master of the *cera perduta* technique.

The most exciting story of African metallurgy, however, is the saga of iron. Although not all African tribes know the art of iron smelting (the Bushmen and most Pygmies do not), it was most probably known to the Negroes before the whites knew of it. It can rightfully be called a thoroughly African achievement. Noted scientists like Luschan have firmly established the fact of

AFRICAN KNIVES



Chieftain's
Knife
Karissme

Striking
Knife
Bayansi

Striking
Knife
Ubangi

Throwing
Knife
Congo
Basin

Hewing
Knife
South
Cameroons

Lindenmuseum, Stuttgart (after K. Weule)

its African origin, although others claim its migration from South Asia or Asia Minor. Be that as it may, Africa is really the classic land of native iron technique. Its towering furnaces were built by the natives long before history was recorded. But the smelting furnace is not an inevitable necessity in primitive iron manufacture. Some tribes still melt iron in the ancient hearth pit, which resembles the ancient earth oven in which smouldering stones cooked the earliest meals. The sight of these white-hot stones in the fire may be responsible for the discovery of the technique of iron melting.

The ability to work off the ore presupposes the existence of simple smelting gear, especially of the bellows, whose oldest forerunners are the fan and the blowpipe. From the latter the two fundamental forms of primitive bellows have developed: the bag bellows of animal skin with a wood-framed opening, and the pump or piston bellows consisting of a box or pipe from which a piston pumps air into the hearth pit or furnace. The pointed European hand bellows is a combination of both.

Division of Labour

The equipment of the primitive blacksmith is of utter simplicity. Pieces of metal or of stone serve as hammer and anvil; two wooden sticks or an iron pincer are his tongs. The number of his products varies from the tools of agriculture, of industry, and of war, to gigantic pieces of 'jewellery' like iron cuffs of arm length, iron collars, iron beads, and the multi-shaped hewing knives for jungle clearing, the 'money' in the shape of spear-heads, and the countless articles facilitating hunt and home life. Iron chains are especially well made in East Africa, and even twentieth-century technique could add nothing in principle to the African art of wire drawing. The smelting furnaces of Gurma, Togo, and Yoruba extend to fifteen feet and higher. The Fulbe and Mandingo artisans belong to the best native blacksmiths. Among the western Bantu iron is mined in adits longer than a mile. The Dark Continent is indeed the continent of iron!

The social position of the blacksmith is one of the most interesting facets of this great industry. While he enjoys a highly privileged position, especially in the western Sudan, where he is a priestlike protégé of kings and chieftains, his position throughout the entire north of Africa is that of a feared and disdained pariah. Stuhlmann explains this attitude from the fact that the later-arriving light-skinned Hamitic and other tribes, who found the Negroes in the possession of a secret they had not known, developed feelings of suspicion and jealousy against them.

In other parts of the world, like Tibet, blacksmiths are regarded as members of the lowest caste. Here, the reasons are religious. The slaughterers of the 'holy' Buddhist cattle and the men who forge the knives to dissect them are lowly creatures who can never rise to lamadom. This does not mean that the faithful would not participate in the forbidden eating of meat. A shrewd way out has been found in the holy city of Lhasa. There a lama reads a religious mass over any ox to be killed, thereby safeguarding the animal's reincarnation and the protection of the smith who furnished the knife from mishaps in the hereafter. Among another Asiatic people, the Buryats, the blacksmiths are the cream of society, freed of paying taxes and regarded as related to the gods. The Mongol *darxat* are smiths with the rank of knights.

The importance of iron is expressed in many Biblical references, like the one in 1 Samuel xiii, 19, 20:

Now there was no smith found throughout all the land of Israel: for the Philistines said, Lest the Hebrews make them swords or spears: But all the Israelites went down to the Philistines, to sharpen every man his share, and his coulter, and his axe, and his mattock.

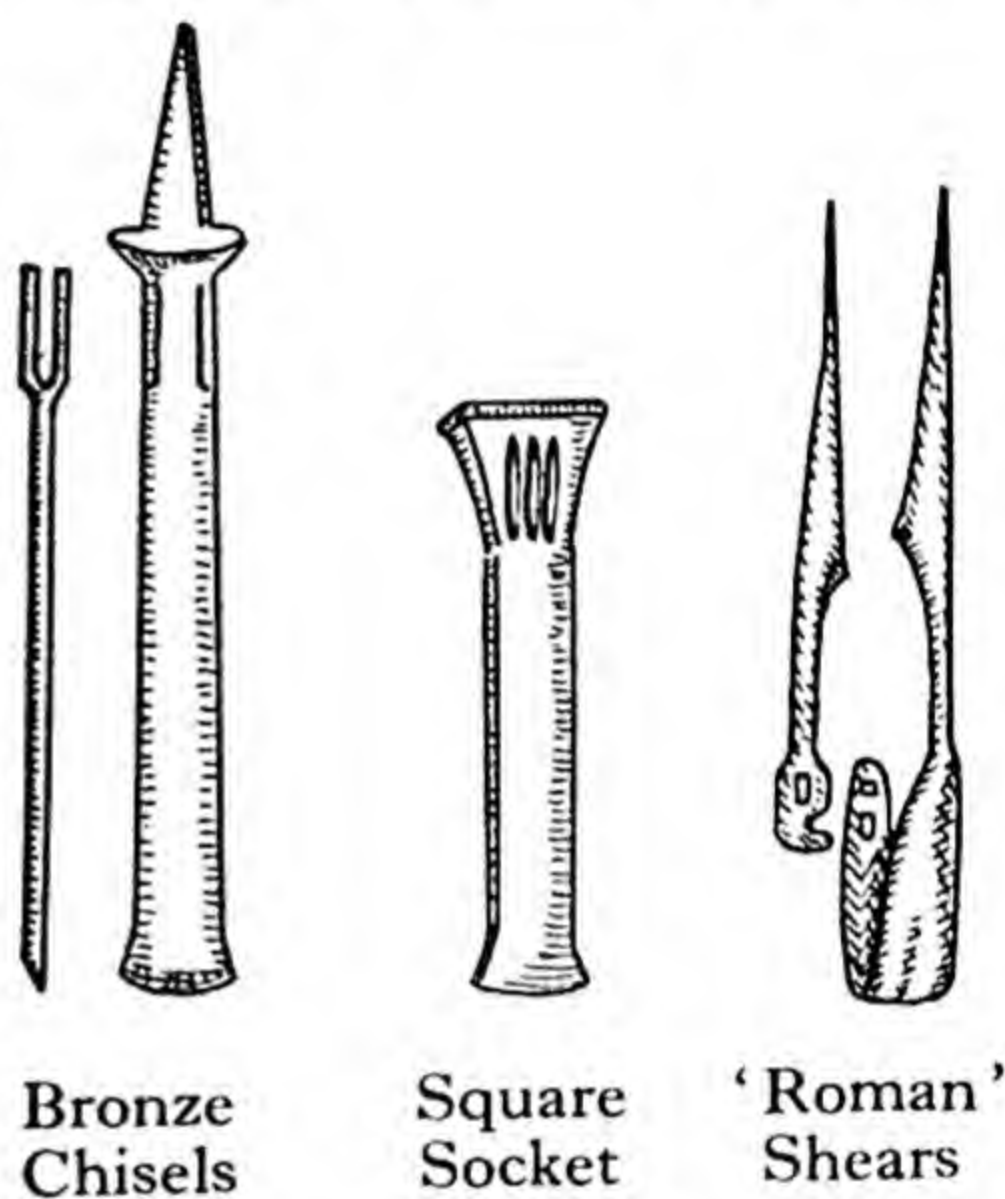
Even then, the possession of iron decided battles and made world history, as we learn from Judges i, 19, and iv, 3 :

And the Lord was with Judah ; and he drave out the inhabitants of the mountain ; but could not drive out the inhabitants of the valley, because they had chariots of iron.

And the children of Israel cried unto the Lord : for he had nine hundred chariots of iron ; and twenty years he mightily oppressed the children of Israel.

The importance of metal tools in the ancient high cultures was tremendous, as was noted by Flinders Petrie. "Thousands of writers," he said, "have described the sculptures of the Parthenon, not one has described the means used in performing that work." In his interesting study of old-world metal tools he shows that "the forms of the chisel were perfected 2500 years ago," and that "saws and crown-drills with fixed teeth of corundum or gem stones for cutting quartz rocks were used in Egypt 6000 years ago." In fact, many ancient tools have not only remained unsurpassed by modern man, but the original good design has in some cases actually deteriorated or been forgotten during the ages. This holds true especially of the Egyptian detachable shears and an Egyptian sickle of extremely efficient shape.

EARLY EGYPTIAN TOOLS



After Petrie

As to the invention of the manufacture of metals outside Africa, Asia, and Europe, iron was not known to the aborigines of other continents. The only Indian tribe which learned to smelt iron ore, the Campas of Peru, adopted their technique from the whites. The entire Pacific area did not know the use of metals. The North American Indians of pre-Columbian times manufactured tools from copper found in their regions, just like their northern neighbours, the "Yellow-knife" Eskimos. However, these tools were hammered into shape, since the natives had no knowledge of the smelting process. For South America, Nordenskiöld claims an independent invention of bronze.

In Africa the process of melting iron is often the centre of a regular religious ritual. The Ganguelas of Angola who dig the

hearth pit must remain without food or any sexual intercourse for a long time. Sacred roots are thrown into the pit, and are then moistened with the blood of a sacrificed chicken to the words : " We kill you not for the sake of your meat, but that the iron may come."

The Pangwe do not begin the good work without the preparation of expensive ' holy medicines.' The ability to melt iron has to be paid for with five sheep, five chickens, and five pieces of brass wire, cashed in by the medicine man, whose presence is obligatory during the smelting. The magic ingredients—a bunch of leaves, ' sacred ' bark, poison, and some brain substance of an ancestor (" to watch the smelting process ")—are enclosed in a small pot and put into the pit, which is then filled with charcoal and the ore and covered with a top layer of more coal. When a burning piece of coal has been introduced into the pit the servants of the bellows begin their work, accompanied by the sound of the medicine man's iron bell and his songs, cries, dances, and wild notes blown on an antelope horn.

Among the Asiatic Buryats a man may become a smith only if he has other smiths among his ancestors. No ordinary tribesman can enter the sacred profession. On the other hand, the qualified man who refuses to accept the great distinction of becoming a blacksmith will die. An old myth of the Buryats tells of the unhappy times when men lived miserably without the knowledge of iron. One blessed day, however, the good ghosts, or *tengri*, decided to send the god Boshintoj and his nine sons down to earth to teach mortals the sacred trade. Boshintoj soon returned to the skies. But his sons married the daughters of men, and their first pupils were the ancestors of all smiths to come. All of the nine have individual names and are the patron saints of the tools of the smithy. In their honour the shaman sings, as Sand-shejev reports, a holy litany in a ceremony built round their worship :

You nine white smiths of Boshintoj !
You, who own the flying spark,
The noisy, sounding tools,
The firm anvil of steel,
The squeaking file—
You descended to the lower world,
A silver-mould on your chests,
Tongs in your left hand !
Mighty is the magic of the smithy,
Magnificent the marvels
Of your mighty bellows—
Ah, you nine white smiths of Boshintoj,
On your nine white horses,
Mighty is the spark of your flame !

And so on, until "the divine spirits of the forge have been appeased."

Mighty is the power of iron—but mightier still is the imagination of man.

When we consider the primitive crafts as a whole we find in the earliest beginnings a logically and cleverly executed division of labour between the sexes. Among the Pygmies and the Bushmen of Africa, the Australians and the Fuegians, the woman is considered and treated as the mistress of the household, while the man is the expert on hunting tools and all activities related to the hunt, including, for instance, the Pygmy manufacture of arrow poison. The Vedda wife of Ceylon digs the yams and prepares the food, while her husband brings home animals of prey.

An interesting survey of the tasks of the two sexes of the Andamanese has been furnished by Mann, who mentions among the daily duties of the husband the following activities: hunting, fishing, the catching of turtles, the gathering of wild honey, the building of the canoe and of the solidly constructed huts, the manufacture of bows, arrows, and most household implements. The women of the same tribe are responsible for the household, care of babies, obtaining vegetal foods, cooking, providing water, care of the fire, building light huts, and the manufacture of the simpler household containers and the 'jewellery.' Furthermore, it is the women's task to shave the rest of the family and decorate their skins with scars and tattoos.

While in the earliest cultures everybody manufactured for himself whatever he or his family needed, the development of specified trades does not occur until the agricultural stage has been reached, when it is not uncommon for the man to assume what had been feminine tasks previously. In the East Mbamland of the Cameroons, the women of the tribe are potters while the men take care of braiding and fibrework. In contrast to this, the men of Togo are the ones who shape the earthenware vessels of the household. On Santa Cruz Island the women are almost exclusively responsible for the care of the fields, cooking, and fishing with nets. The men dedicate themselves to the manufacture of most material possessions with the exception of bark-cloth making, which is women's work. The braiding of the all-important mats and the manufacture of tools and weapons are done by the men, who often do their work collectively in a club-house. In Melanesia the women are exclusively responsible for the manufacture of ceramic products.

How manifold was the technical education of, for instance,

a Maori boy in all male trades has been recorded by Best. The training of such a young man ready to start out in life began with the manufacture of greenstone and bone tools, of spears and spades, and later he was taught the making of the scuffle hoe and the smaller tools necessary for the care of the taro crops. His advanced courses taught him the construction of "houses, huts, cooking sheds, store-houses, also elevated platforms or stages on which certain food-supplies and other things were stored." He learned the construction of windbreaks, shelter huts, and hamlets, "the art of dressing timber with stone adzes of two kinds and the use of the wooden beetle and wedges in splitting timber as material for dwelling-houses, store-houses, defensive stockades. The use of stone chisels and drills was also taught, also the art of wood-carving and of painting designs." "Yet another course of instruction," Best says, "was that connected with the making of canoes and their numerous appurtenances, and likewise the manufacture of fish-hooks."

Often the restriction of different skills to one or the other sex leads to such specialization that a lack of versatility is the result. This is especially true of Africa. Individual craftsmen began to make one article exclusively, and all who wanted it had to trade with them. Tessmann reports from the Pangwe that among them a man manufactures, for instance, spoons, and refuses to carve ladles; that a stool-maker makes only stools; a crossbow-maker makes only crossbows; a man's carrying bag is obtainable only from the manufacturer of men's carrying bags, and so forth. This often makes it necessary for the tribesmen to undertake long trips to procure a simple gadget like a baby-carrier, consisting of two leather strips, which anybody can make, but which only one man is entitled to manufacture.

The growing tendency towards specialization, then, led finally to the formation of regular professional groups and castes in the high cultures. The strongest manifestation of this was the guilds of the European Middle Ages. Our machine age has gone further. On to-day's assembly lines in the great factories we find men who make one screw, one bolt—one part exclusively—as long as they live. This may serve the efficiency of large-scale mass manufacture, but whether it is an effective means of developing the powers of initiative in a man is another question.

In primitive cultures, as well as in our own, over-emphasized specialization most certainly causes a deterioration of individual skill. Among the primitives it can lead to complete abandonment of a knowledge once possessed. This is especially true under

the influence of the white man's importations. It is one of the reasons why the word 'progress' should be used only with greatest reservation, because for what we learn in the technical world we sacrifice an older skill which may not be inferior as far as dexterity and initiative are concerned.

A Labrador Indian whose steel traps had been stolen managed to save his very life by remembering how his grandfather built the ancient wooden traps. All over the world we can observe the dying of old artisanship and true handicraft. Cheap ironware replaces the beautiful stone knives ; glass beads supplant ivory and tortoise-shell ; bright aniline paints kill the knowledge of the blending of the soft mineral and plant colours. In India the famed lac dyes, once a source of employment for thousands, vanish under imports ; the arts of leatherwork and tanning are rapidly being forgotten. The products of the Lancashire mechanical looms replace the output of the native cotton mills of Bengal.

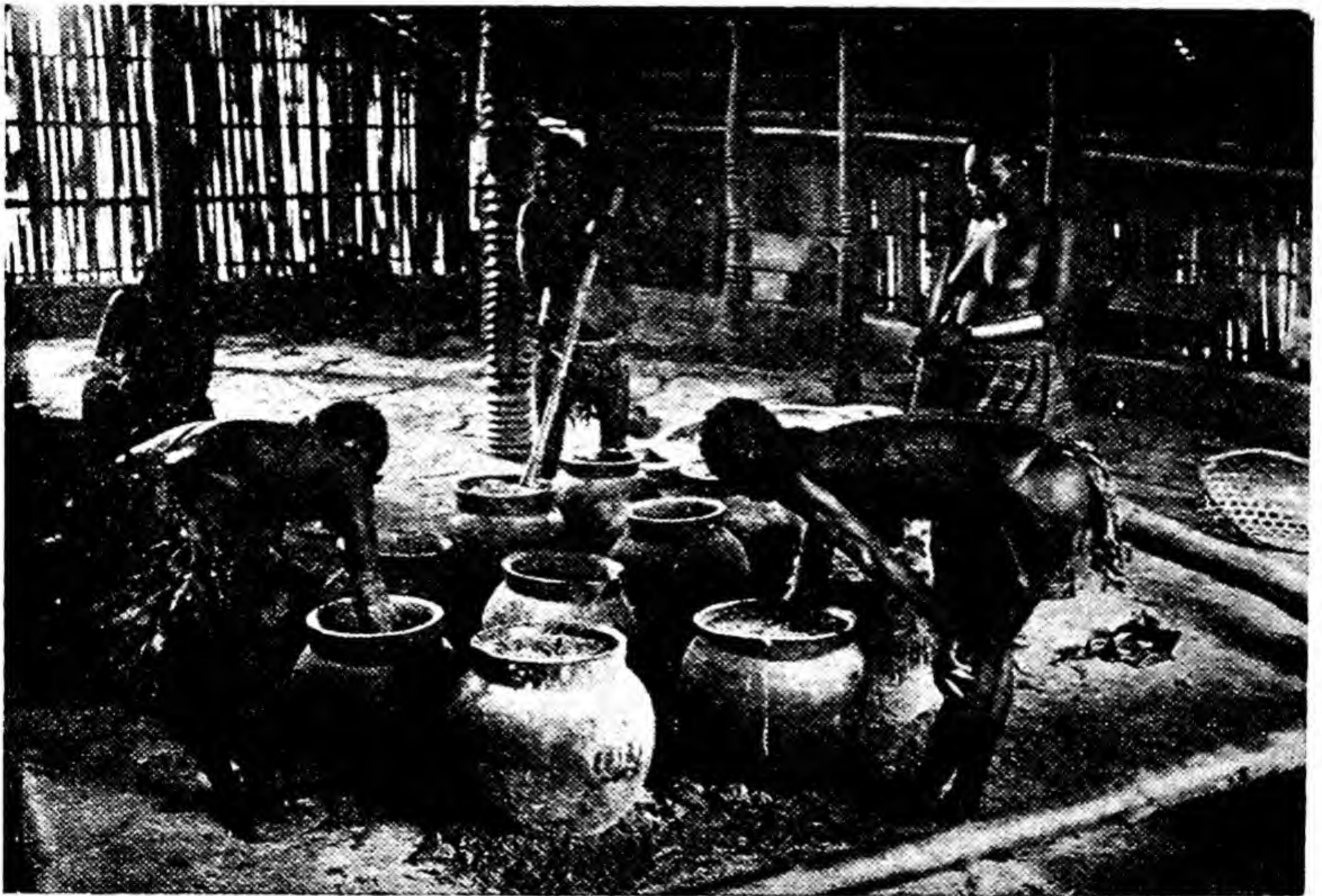
In our metropolitan centres of progress we often have trouble in finding a watchmaker skilled enough to repair a timepiece with the care and efficiency such precision work requires. Our great respect for antique furniture comes in part from our knowledge that modern manufacturing methods provide for neither the time nor the skill to produce objects of lasting value. Even the native implements frequently offered to our museums show a marked decline of quality. It is one of the criteria of a good curator to distinguish between the careful products of traditional workmanship and the export ware which reaches us only too often from the 'primitive' corners of the globe. Our artisans have realized the danger, and the civilized efforts to save the skills of, for instance, the Navaho Indians and of the sculptors of West Africa have led to the establishment of schools for the preservation of native handicraft.

The most modern twentieth-century prophets of applied art try to awaken a new appreciation of hand-made things and to achieve qualities comparable with those of the first primitive manufacturers to whom 'the best for all' was no problem.

CHAPTER SIX

Having a Good Time

WHEN WE SET out to enjoy ourselves we have to go through considerable preparation for our pleasure, like buying tickets, dressing, arriving on time, or preparing our homes for the reception of guests. Whether we know it or not, all these preliminaries



BEER-BREWING WOMEN

Belgian Congo

By courtesy of the American Museum of Natural History, New York

take some of the impetus out of our joy. Furthermore, the 'relaxations' of civilized man are often of a strenuous nature.

Primitive man is much luckier in this respect. He need make no effort to prepare for a good time. His gay nature, unshackled by conventions and frustrations, keeps him at a mental level of comparatively permanent happiness. Not that he lives in a paradise; his hardships are plenty. But he is so perfectly adjusted to his narrow and perilous world that he takes even un-

avoidable disappointments in a calm, philosophical spirit. When times are tough the savage cheerfully hopes for a better turn of events. He practically always has a good time, because the notion of time is not a factor in his scheme of things. He is never 'late.'

In the oldest cultures tobacco and alcoholic beverages are unknown. No artificial stimulants are needed to make a gathering festive. Most celebrations are casual. Official feasts on fixed dates are features of the more advanced of the high cultures. When times are good in primitive tribal life they are enjoyed as they come. No egotistical attitude limits the circle of the celebrants to a chosen crowd. Whether it is the neighbourly chat in hut or community house or the great inter-tribal visits of the harvesters, everybody who can possibly be accommodated is welcome to share whatever there is to share.

The good times of the wilderness naturally depend to a large extent on the availability of food. Nowhere does hunger inspire hospitality. But when plenty of game has been brought in, when the fruits—especially the perishable ones—are ripe, when a whale has been harpooned, the blessings of abundance are enjoyed by every one who cares to take part.

The menu of the primitive kitchen is by no means monotonous, although the climatic conditions make for natural limitations. In Tierra del Fuego, for instance, where the cold, moist forests are 'dead' and covered most of the year with a 'shroud of snow,' the reefs of the shore abound with edible sea-fowl like wild geese, penguins, cormorants, and gulls. Mammals like seals, sea-lions, and whales come in from the sea. Shells and snails, clams, crayfish, and sea-urchins provide variety. The prize roast is the guanaco of the plains. All meat is roasted or cooked in the hot ashes or in the open fire. The cold, humid climate produces few vegetal foods except barberries, but these people keep healthy with their saltless diet and with no beverage other than clear water. To the vitamin addict the word of a Naskapi Indian of the subarctic regions of Canada may provide food for contemplation: "The bear eats the berries, and we eat the bear—so why bother with vegetables?"

For the nomad hunters of the eastern Bolivian forests, like the Siriones, nature provides a much wider choice. A variety of palm-trees furnishes delicious fruits which are often roasted in the fire; and tapirs, alligators, wild boars, turtles, squirrels, armadillos, snakes, insects, and even worms are cooked in the hot ashes.

It is interesting indeed to note the culinary possibilities even

of rough regions like south-eastern Alaska, where natives treat each other to 'ice cream' of pounded fish roe or, on the sweet side, to frozen soapberry mush. The Alaskan Indians, who never used salt before the arrival of the white man, have vegetables like wild celery, wild sorrel, and the delicious inner white bark of young spruce-trees, supplemented by currants, cranberries, salmonberries, strawberries, huckleberries, and other berries.

Besides sea food and fowl, they enjoy the meat of the seal, the deer, and the bear, and other wild game. But the five species of salmon that abound in their region are perhaps their most important food. Salmon is eaten fresh or air- and fire-dried, and the heads of salmon and halibut, buried in the ground and eaten after some days, in putrefied condition, are a treat fit for an honoured guest. The method of wind-drying meat and fish is an established Eskimo custom, while smoke-drying, which produces a much tastier staple food, is the typical meat-preserving method of the Indians of Labrador. The Eskimo habit of storing fish in caches and eating them raw, tainted, and frozen, is responsible for their name 'raw-eaters,' as the neighbouring Indians call them.

To the harvesting peoples the plants on which they depend during the major part of the year are not only the sources of food supply, but also the means of their hospitality. In Australia whole tribes are invited to share the feasts held during the lily-root, bunya-bunya, and nardoo seasons, and dances and shows are enjoyed with the assurance that everybody can eat to his heart's desire.

In America the Kamia exchange their wild acorns for the cultivated water-melons of their Diegueño neighbours. The nutting parties of the piñon-collecting Apaches are social events, paralleled by the season when the mescal tubers are gathered. The gathering groups camp in the hills to exchange stories, songs, and gossip, and to enjoy one another's company without having to worry about empty stomachs.

Although delicious trout fill the streams of the Apache region, they are never eaten, because an old legend maintains that once people became very sick after a trout meal. Their skin was "spotted just like the fish in the river" and they died shortly afterward. "From that day to this," says Reagan, "no Apache has eaten fish." The medicine men do their best to keep them aware of the 'danger.'

The fish and the acorns of the Pomo are all of 'mythical' origin. The knowledge of acorns came to the Indians during one of the

five creations of the world (which was destroyed four times by the powers of nature). During the third period *Marumda*, a supernatural being posing as an old man, taught them to pick acorns. "These you will gather, and with them you will make mush!" He taught the women how to dry, grind, and soak the acorns to make them sweet and how to work the dry and pounded flour into food. Typically enough, the hospitable Pomo women called the old man to their hut for the first acorn meal; but he had vanished.

They consoled themselves with the thought, "He must have left us to teach other people somewhere else." Acorns may be eaten raw; their flour is baked into bread, or cooked to mush. They are also browned and brewed to make 'coffee.'

The manifold uses of plant products are widely developed by the agriculturists, who know how to transform the cultivated plants into a variety of foods. The manioc root of the cassava shrub is made into 'cheese' by

the Guarani of Paraguay by fermenting roots for a week in the swamps. The mushy substance obtained is also dried in the sun and pounded into flour, from which the tasty *mandió mbedju* pancakes are baked. The peeled root is either boiled in water or minced, dried, pulverized, and baked in fat as *popis*. The unpeeled root is often baked in the hot ashes.

The taro (*Colocasia*) of the South Seas, of Africa, and of Malaya requires long and careful preparation. The Melanesian housewife, for instance, carries the taro roots home from the fields in the basket on her back. She then makes a roaring fire and peels the vegetables with a shell knife. She bundles the clean roots, wraps them in banana leaves, adds a second layer of about twenty taro leaves, and ties the whole bundle together with lianas. According to the size of her family and the number of guests, she may need a series of such bundles for an adequate meal. She often prepares similar bundles containing left-over peels and some



BANTU WOMEN POUNDING FLOUR AND
KNEADING DOUGH

After Haberlandt

young taro leaves for the pigs. After the fire has burnt down she removes the hot stones from the hearth and places the taro bundles in the smouldering pit, covering them with the hot stones and a layer of sand. After two hours the bundles are taken out, ready for the table once the wrappings have been removed. The pigs, as Krämer-Bannow tells us, impatiently expect their share. They are so well kept that their "tender, tasty meat is as fine as veal."

Another fundamental food plant of the South Seas is sago, the marrow of the sago palm, which is cut down, split open, and serves as a wooden mould in which the marrow is minced on the spot. With the help of an ingenious sieving device, it is washed and kneaded in a river, which carries away the floury particles and leaves the desired sago lumps. After drying, these are either baked into flat, hard bread or cooked into a jelly-like mush. For the preparation of the all-important coconut which furnishes 'meat' and juice and oil, multi-shaped crackers, graters, and smashers have been invented.

What the cassava, the taro, and many similar plants like the bread-fruit, the mangrove, etc., are to other continents, the banana or plantain is to the natives of Africa. It is, indeed, the 'bread' of the Negroes. Often it is roasted or made into soup or gravy. Banana flour is obtained from the green fruit, which is peeled, cut into pieces, and mashed. Pepper and salt are added, and dumplings are made which, cooked in water or palm oil, form the basis of many African meals. Meat, fowl, and fish of all kinds abound in Africa, where practically everything is used for food, from insects, rats, and alligator eggs to elephants and ostriches.

The main African meal is usually in the evening when the heat decreases. Friendly groups turn their gatherings into celebrations. There are dances and shows and music, and the storytellers transform the black night into a colourful stage on which the figures of their imaginations go through strange adventures and mystical experiences. The Shilluk eat only after sunset and consider it a disgrace to eat during day-time under the bright skies.

One of the strangest African delicacies, especially of the west and the regions adjoining the Sudan, is clay or earth. Plischke remarks that "persons of high rank eat daily up to three such 'rolls.'" Fine, fat earth also is used for seasoning and is sold in roasted disks or granulated like flour.

Geophagy, which is the practice of eating earth, is found in many other places, including South America, China, and Indonesia.

The Tatu of California mix their maple flour with red clay. 'Stone butter' or 'mined flour' was eaten in times of need in Germany and Russia. During the seventeenth century the noblewomen of Spain developed such a craving for the tasty earth of Ertemoz that State and Church had to lay heavy penalties on this 'vice.'

The more palatable mineral known as salt is not known to all peoples. Many hunting and food-gathering tribes do not use it directly. They season their foods with plants and with the spicy ashes of certain woods.

On the other hand, some African tribes, who count salt among the most valuable possessions of man, go long distances to get it by trading and, if it is otherwise unobtainable, get it from the swamp plants by an exceedingly complicated process.

No people, however, can subsist without water, which may be 'seasoned' by the addition of cherished plant ingredients to turn it into a beverage fit for social occasions. Among these additions to drinking water tea is perhaps the most generally used. It is believed that it came from Assam to China, where its popularity grew from the fourth century A.D., although an ancient document has been found, dating back to 59 B.C., in which an obstinate slave is ordered in humorous verse to "boil tea and fill utensils." The earliest use of tea was for medical purposes. The leaves were eaten with rice, ginger, salt, orange-peel, and milk, and even boiled with onions.

Its stimulating qualities and its aromatic flavour make tea one of the most 'social' drinks of the world. Tea ceremonies belong to the most finely developed traditions of Asia. The indispensable tea of Paraguay, wrongly known as 'maté,' the name of the calabash from which it is sipped with the bombilla, has especially stimulating effects. No party among the Indians would be complete without it.

What coffee, the other warm beverage that conquered the world, can taste like is known only to those who have sipped it in its native continent, Africa. Named after the southern Abyssinian province of Kaffa, from which it hails, its fifty species are now cultivated in most tropical regions of the globe. Only during the fifteenth century was the knowledge of it transmitted to Arabia and Java, and not until two hundred years later did it conquer the countries of South America and the rest of the world.

When a group of burnous-garbed Arabs sit down at their chess-boards to have a good time with the 'divine drink' no

tea ceremony of Japan could outdo the tradition-honoured love with which the host prepares coffee in the African manner. The green beans are freshly roasted in a wooden bowl filled with glimmering charcoals. Each bean is individually removed with a wooden pincer and inspected. The roasted beans are then pounded in a wooden mortar with an iron pestle and the very fine powder is put in a vessel of water, which is brought to the boiling-point. It is then poured into an earthenware jug and blended with three to four other brews of coffee. After this intricate preparation the guests' cups are filled, and a fragrance of the *Arabian Nights* permeates the room to inspire the conversation of the appreciative guests.

Chocolate is another delicious-tasting beverage which has gained wide popularity. Chocolate and cacao, from which it is made, are the cultural property of the Indians of Central America. They invented the drink from the *cacahuatl* beans of the *Theobroma cacao* L. shrub. When the white explorers reached the empires of the Toltecs and Aztecs they found not only the strange new beverage but also that cacao beans were used as coins. Some Indians even to-day use cacao beans as money, especially in Guatemala.

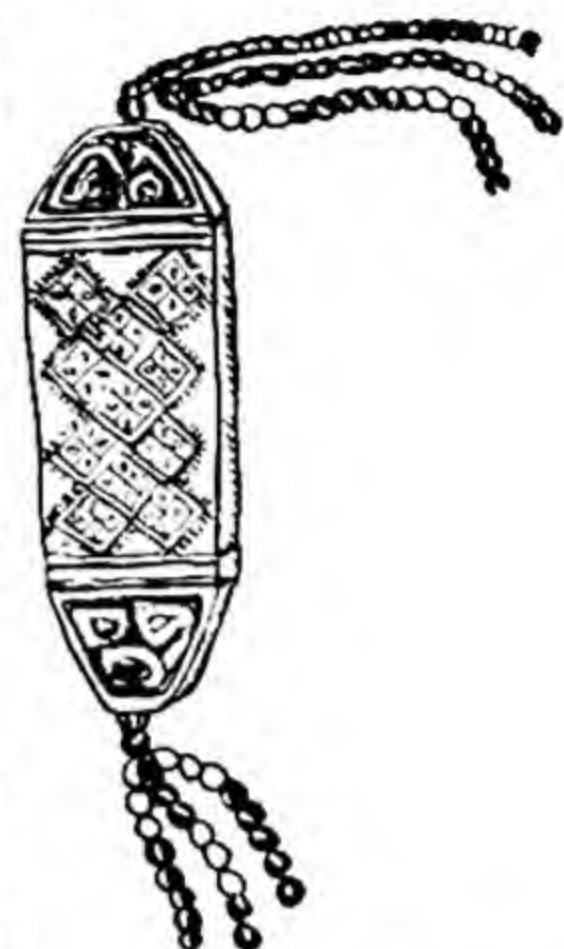
To make the beverage as the old Mexicans drank it, the cacao beans are roasted, grated, and pulverized on a stone slab and mixed with seasonings such as vanilla and pepper. Sugar was unknown, and only the wealthy could afford to sweeten their cacao either with honey or with the juice of the agave.

In 1520 the knowledge of cacao reached Europe with the Spanish conquerors. About a hundred years later it spread from Spain to Italy and to France, where it became tremendously popular. The sweetened, thickened mass known as chocolate conquered the world market only after the Dutchman, van Houten, had found ways to free the cacao powder of its heavy oils, thereby making the drink a much tastier one and easier to digest.

Although cacao is the classic drink of its native Central America, and although the plant is now cultivated in many tropical places, it was a beverage of primitive man only within a rather limited region and has not had large effects upon primitive cultures as a whole. Only the initiative of the white man and his business sense helped chocolate to its present position in the world market.

As pleasant as the enjoyment of a stimulating beverage is the habit of chewing some substance, the juices of which, together with the act of chewing, often have a soothing effect on the nerves. For the primitives of Melanesia, Micronesia, East India, and the Malayan Archipelago the chewing of betel from the areca nut is a supreme pleasure. Indian merchants brought the know-

ledge of this treat to East Africa, where it keeps the natives' jaws busy most of the time. As a gesture of hospitality, the welcome guest is offered a packet of this special 'chewing gum.' The packet contains a slice of the areca nut, powdered with lime or coral rag, and wrapped in a fresh leaf of the betel-pepper plant. It has a refreshing if bitter taste, but has the disadvantage of discolouring the teeth with a blackish tint and dyeing an addict's gums an unappealing brown colour. The habit of betel-chewing has produced a wide range of carved or otherwise fancily decorated containers for holding the favourite ingredients.



BETEL-BOX

Timor

After Hambruch

Similar lime boxes were carried around by the ancient Chibchas of Colombia, who were especially fond of another chewing stimulant, the coca. Long before modern science recognized the medical qualities of cocaine, which comes from the leaves of the *Erythroxylon coca* shrub, the natives of Colombia, Bolivia, and Peru chewed the bitter leaves with lime to experience the sensation of new vigour that it quickly produces. Especially

in the white world, the over-indulgence in cocaine, prepared in more sophisticated and dangerous combinations, has led to most tragic results, which are counteracted by legislation in all civilized nations.

Other famed stimulants that have caused much misery to entire nations are opium, which comes from poppy seed, and the dangerous hemp known since Marco Polo's times as 'the key to Paradise.' The word 'assassin' is derived


NARCOTIC DATURA
PLANT

SPINY CAPSULE
OF THE
JAMESTOWN
WEED

After W. E. Safford

from the name of the hemp addicts, the *hachichés*, who, during their rages of hashish drunkenness, were used centuries ago by the old Sheik al Chebel to kill his enemies. To anyone interested in hashish, Baudelaire's *Paradis artificiels* is a classic description of glowing, bizarre, and frightening visions described by a great artist whose own health was ruined by it.

The smoking of hemp and opium was probably known to the prehistoric Lake Dwellers, as extant implements indicate. Indeed, many primitive peoples had thorough knowledge concerning narcotic drugs derived from various plants—drugs which they ate, snuffed, or drank in concoctions.

In the primitive world, however, the desire to let the mind sojourn in 'artificial paradise' often had religious reasons. When tribesmen get together to enjoy the state of visionary drunkenness



SIXTEENTH-CENTURY REPRESENTATION OF THE 'BLACK DRINK' CEREMONY OF NORTHERN FLORIDA

After Le Moyne (1564)

caused by a drug their gathering is mostly of a ritual nature. In some tribes only the medicine man knows the magic of the drug; in others, the soldiers bolster their courage by artificial means just before a battle. Probably the only tribes of the acquisitive economic stage who knew opiates are the Australians, who use a woven container to hold the cherished pituri leaves (*Duboisia Hopwoodii*) which they chew to project themselves into a dreamlike state of mind.

In New Guinea *nonda*, a wild mushroom which makes the user temporarily insane, is eaten 'in times of great excitement.' Many American Indians are fully familiar with intoxicating drugs. Among the many species used by them are the 'Jamestown weed' of the Zuñi, the *peyotl* cactus (used by many mystical cults on the North American prairies, in Mexico, and elsewhere), the narcotic *piptadenia* snuff, the 'black drink' of Florida, and the

notorious marijuana which figures so frequently to-day in American juvenile delinquency.

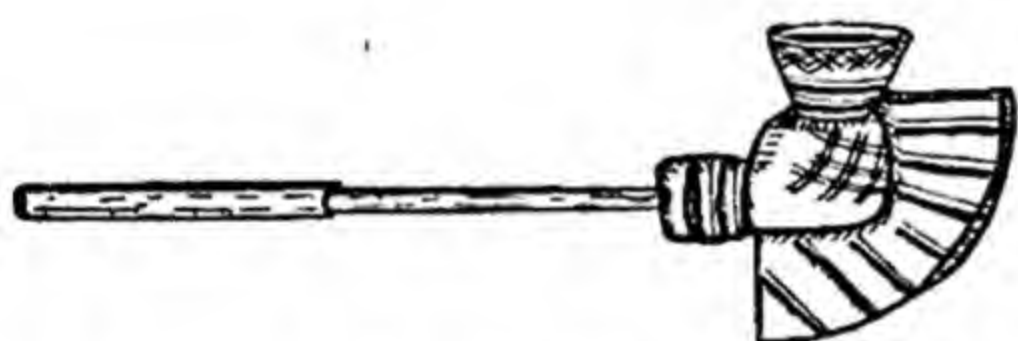
There is a difference between these drugs and the lighter stimulants, between excess and moderation. Only fanatics can deny the beneficial inspiration that comes to the human mind from one of the oldest providers of joy and friendly hospitality—tobacco. Its blue clouds have provided the touch of intimacy to any place where friends get together to exchange their opinions; they have inspired many an inventor and philosopher with creative ideas in his quiet den. Even saints and monks have not resisted the silent company of a contemplative smoke.

Modern scientists are not unanimous in their opinions about the origin of the tobacco-smoking custom. Although Lindblom stated in 1947 that "probably every one is now agreed that tobacco reached America from the Old World," many contemporary students of this question still believe with Nordenskiöld that "snuff, cigarettes, cigars,

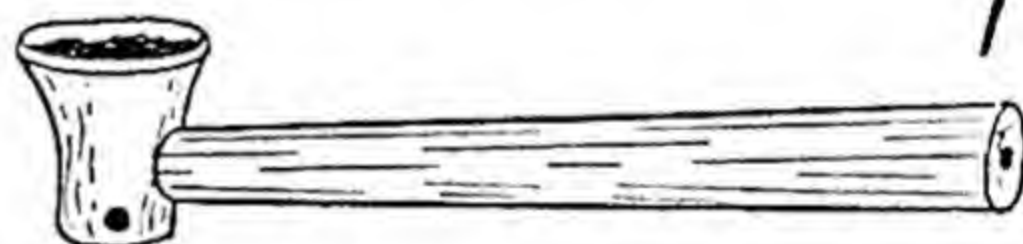


TUCANO INDIAN
SMOKING CIGAR
IN CIGAR-
HOLDER

TOBACCO PIPES



Cherokee Pipe of Black Stone



Tobacco Pipe
Wood
Pangwe, West Africa
After G. Tessmann



Pipe of the Yakuts
Museum of Ethnology, Hamburg



Tobacco Pipe
Clay
Pangwe, West Africa
After G. Tessmann

pronged cigar-holders, and tobacco-pipes are Indian inventions." Be that as it may, the first white men who came to the American continent were amazed by the native habit of "producing smoke

from an herb held in the mouth" and took the knowledge home with them. Early in the sixteenth century it was popular as a remedy



BUNDLED CIGARS AND
ASH-TRAY

Codex Florentino
Mexico

After Sahagun

against toothache, gout, and many other ailments. Jean Nicot, a French ambassador at the Portuguese court, introduced it to the royal circles of his country. He won fame as the inventor of the *nicotiana*, that 'healing herb' whose powderized leaves were given as a medicine to the son of Catherine of Medici.

The use of tobacco for smoking became popular in Europe only at a much later date.

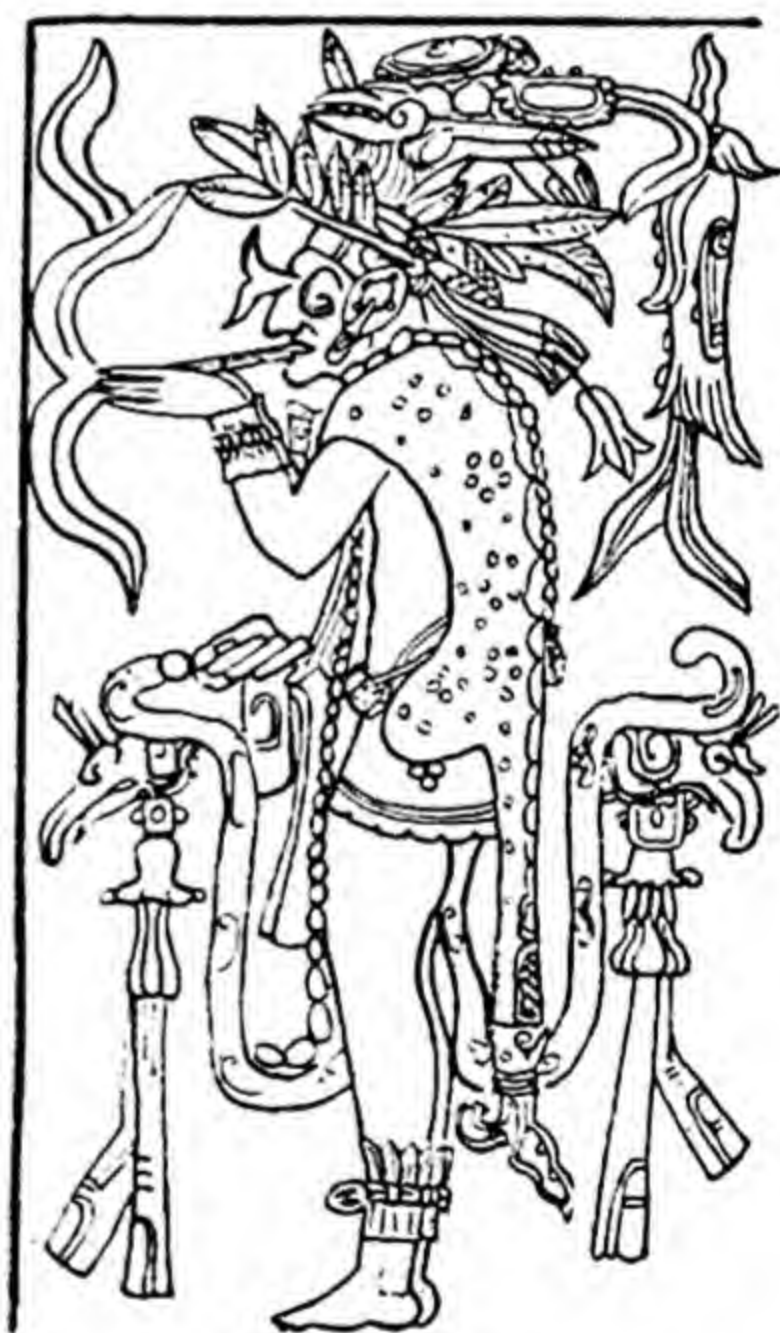
Since then the controversies among the enemies of the 'devil's herb' and the friends of the 'breath of the gods' have continued through the centuries. Staal, one of the



MEXICAN SMOKER

Codex Vindebonensis
Mexico

Nationalbibliothek, Vienna



SMOKING MAYA PRIEST

Stone Relief at the Temple
of Palenque

*After Abbé Brasseur
de Bourbourg*

ablest historians of tobacco, is correct in his statement that "no other plant has influenced as extensively as the tobacco the economic and cultural life of all humanity."

Tobacco was first used for ceremonial purposes, the Indian pipe of peace being the well-known example. The forms in

which it is enjoyed vary widely, even on its native continent. There are the 'smoke rolls' of South America; the gigantic cigars (the word *cifar* is of Central American origin) held in place by huge carved forks by the Tucano Indians; the eating of the leaves practised by the California Chukchansi, the Gashowu, the Tachi, the Wukchami, the Yaudanchi, and the Yauelmani, among others.

Another practice is to mix the leaves with burnt mussel-shell powder, as do the northernmost tribes of the Pacific Coast. Drinking a concoction of tobacco in water is known in some places and, according to Kroeber, "the Chukchansi speak of being able to detect wizards after eating tobacco." The Labrador Indians appease the spirit of a killed bear with the offering of a ceremonial smoke of bark tobacco. Whenever the white man's smoking herb is not available the Eskimos depend on their own ancient brand, the *Atamaoya*.

Many North American Indian tribes cultivate their own tobacco and trade it widely; others gather the wild varieties. It is the only plant cultivated by the Yurok, otherwise a non-agricultural people.

The reaction of the natives of other primitive regions to the introduction of tobacco is very varied. In New Guinea, where it is smoked as well as chewed, men, women, and children roll their own cigars from the traded or cultivated tobacco leaves. In contrast to this, the Ponape natives "never learned to appreciate the enjoyment of tobacco." Other Pacific Islanders prefer it merely as a 'seasoning' for their betel quid. The natives of Africa, however, have become regular addicts of the herb. Albert Schweitzer calls the Lambarene region "this land of the chronic nicotine poisoning," and states that women are even more excessive smokers than the men. Due to their over-indulgence, they suffer from insomnia and "go on smoking all through the night, to dull their nerves." An employee of the British-American Tobacco Company wrote about the East African Kavarondos: "We



WOODEN PIPE-BOWL

Haida Indians

*Museum of Ethnology,
Berlin*

packed our cigarettes in boxes of four, because the Kavarondos smoke four at a time, putting one in each corner of the mouth, and one in each nostril."



PIPE-BOWL

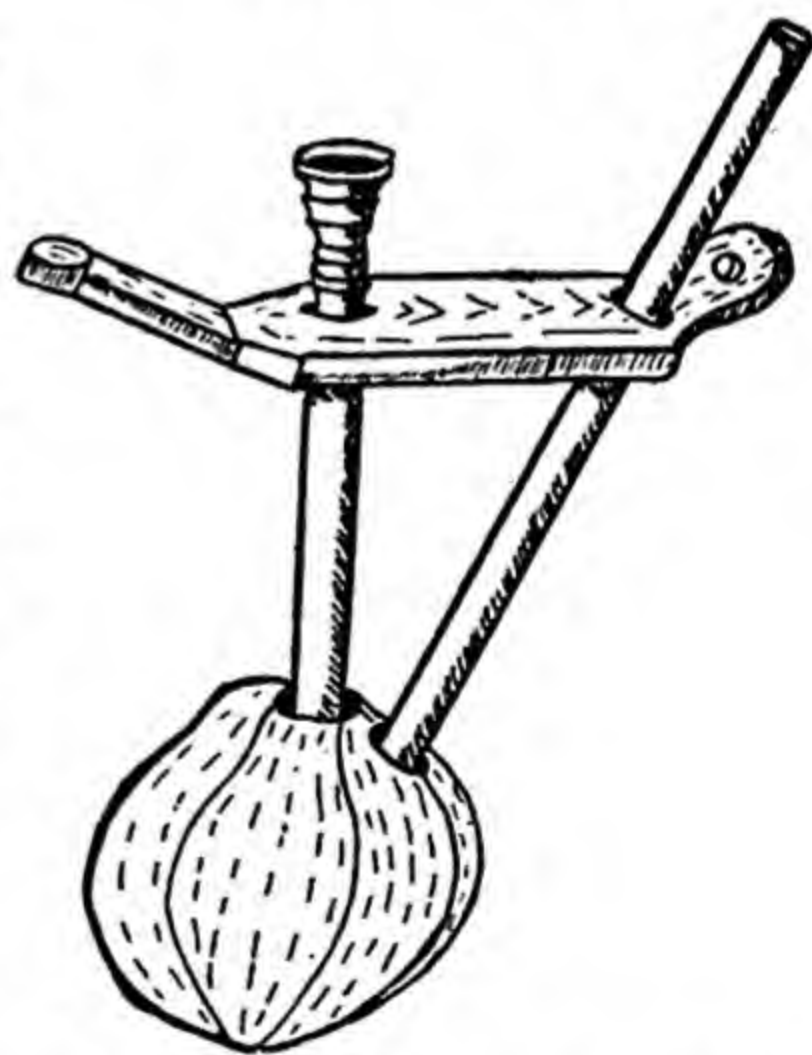
Clay

North Cameroons
Museum of Ethnology,
Cologne

The Pangwe cultivate four varieties of tobacco. The Nuer 'improve' the taste of tobacco by added mixtures of ashes and cow-dung, and smoke the blend in enormous clay pipes with pumpkin bowls. From the simple tubular pipe to the red and black North American models carved from the 'holy pipe-stone,' to the richly decorated clay, slate, and wooden pipes of the world, receptacles for the 'divine herb' have been shaped by all peoples in manifold varieties. Many African tales explain the origin of tobacco as a supernatural gift of the black man's gods. The glowing pipes of the jungle belong to the very conception of the enjoyment of life at its best.

A m o n g
the tobacco

pipes of the high cultures the water pipe of India, China, Persia, and Arabia is perhaps the most picturesque. It is an apparatus consisting of a water-filled container, usually a coconut or an ostrich egg-shell or a clay or porcelain vessel, topped by a tube carrying the tobacco-filled pipe head. The user inhales the cool water-cleaned smoke through a special mouthpiece attached to a thin tube which is connected with the container. Groups of Mussulmans like to sit together in the evening in the shade of their yards, discussing the world and themselves while peacefully sucking the smoke, often from different tubes all attached to one narghile (from the Persian *nargil*, 'coconut'). The Arabian and Indian water pipe, the hookah, has found its primitive imitators in many regions of Africa.



HOOKAH WATER-PIPE

Africa

Museum of Ethnology,
Leipzig

When we think of a group of men smoking and having a good time the picture of amicable exchange of thoughts and of tall-story telling is incomplete without one of the oldest lifters of the spirit—a container filled with an alcoholic beverage of some kind. Alcohol is by no means a product of civilization. The *apéritif* served on a silver tray in the cafés of the Champs-Élysées, the whisky of the English clubs, the wines of the Moselle, the Rhine, and the Champagne—all have their forerunners in the beers and wines of the primitive agriculturists, and in the fermented milk drinks of the early herdsmen.

The making of alcohol requires the discovery of the process of fermentation, which probably came about in a relatively simple way. Perhaps some primitive who had crumbled his bread into a container filled with water noticed, the next day, bubbles rising to the surface and a solid substance at the bottom of the vessel. Tasting this 'water,' he found himself getting into an unusually merry mood, so he decided to go further into the matter. Another savage might have cut the stem of an agave, and after drinking its juice carried the rest home in his calabash. A few hours later, observing that the juice in the container had undergone a change, he tasted the stuff and found it worthy of investigation.



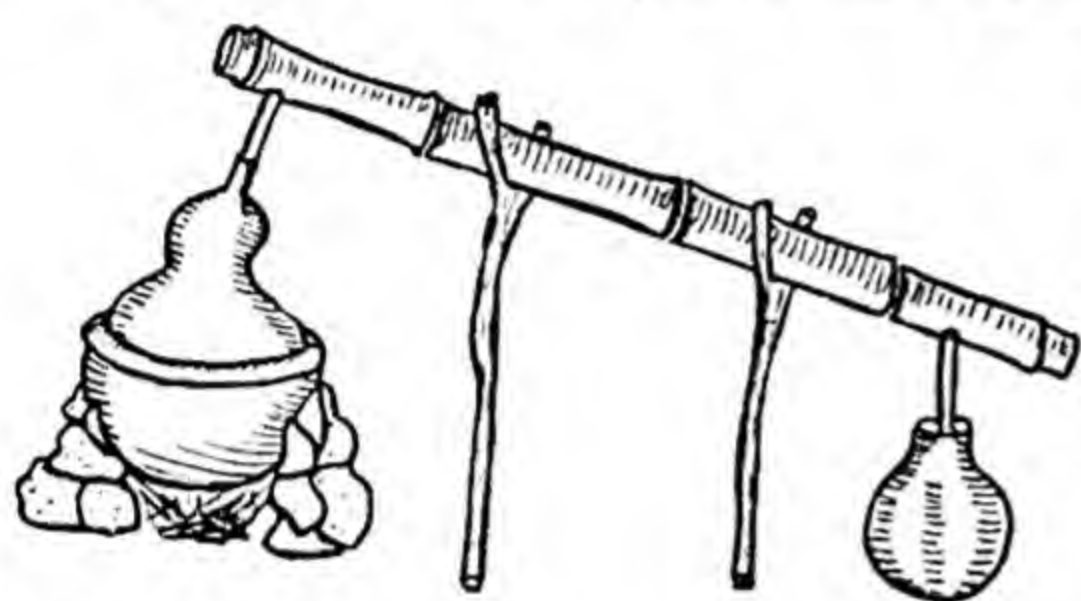
EUROPEAN 'BAR'
TOWARDS THE END
OF THE MIDDLE AGES
After Hans Sporer (1498)

All alcoholic beverages fall into two general types: wine, in which the alcohol is created directly from sugar, and beer, in which the alcohol is produced from sugar by the addition of starches. A side branch is the fermentation of lactose (milk sugar) in the milk drinks of the herdsmen.

Among the wines of primitive tribes palm wine is one of the most widely known varieties. Often, the trees are cut down and their crowns raised on a supporting structure. All along the upper surface of the trunk, openings the size of a child's hand are cut. A small fire is started beneath, and the juice accumulating in the openings is collected in calabashes. It is then put in containers which are covered, stored away, and left for fermentation. After three to four days the beverage is ready for consumption, and the drinking bouts which are just as popular in the jungle as in our cocktail lounges can begin. In tropical climates the juice drained off in the morning ferments by noon and foams over the top of the container. The fermentation is caused by yeast germs

from the air. They change the sugar of the juice into alcohol and carbonic acid. The substance which settles at the bottom of the container is yeast.

Many African tribes obtain their palm wine without felling the tree. They climb and tap the tree at the top, where the juicy young shoots come out. This is done in the evening. In the morning, by which time the drink is ready, the calabashes in the trees are a welcome sight to the thirsty—the innkeeper's sign in the jungle. The yellowish, effervescing palm wine of the Pangwe has "a strange fine flavour which one never forgets."



STILL FOR THE DISTILLATION
OF PALM-WINE

Moluccas

After Martin

Pulque, the forerunner of which was the *octli* of the Aztecs, is made from the huge shaft of the agave flower. Many North American Indian tribes brew their wine from cactus plants, like the Papago who use the saguaro fruit and during wine time have a series of elaborate festivals during which the medicine men perform rain magic. Maize, sweet potatoes,

manioc, and sugar-cane furnish the drinks for the celebrations of all tropical merry-makers.

The Khonds of India make their wine from the *salopo gaxo* palm-tree, which furnishes twenty to twenty-five litres of wine daily; during blossom-time they "do nothing but drink." It is the time of boundless merry-making and dancing. The *Meginakan* festival of Borneo is an elaborate affair which only the wealthy can afford. Their *nassi* wine is obtained from rice. Gongs are beaten when it is ready, and pigs and fowl are prepared in huge quantities to feed the celebrants.

Beer is a favourite drink of the Apache, who obtain it from mescal tubers. The Neoze of eastern Bolivia brew it mostly from wild honey, maize, or yucca. Some tribes speed up the fermentation by kneading; others by chewing the ingredients.

African brewers are even more numerous than the wine manufacturers. Every one who has ever penetrated the Dark Continent has been invited to join the happy celebrants of whole villages in native 'beer gardens.'

The customary beer of the primitive Himalaya tribes is the *maruwa*, obtained from millet and other grains. Their "steins," in which the beverage is brewed, are bamboo sections with banana

leaves for covers. The drinkers sip it with small tubes and fill the container again and again with hot water, until the brew has lost its stimulating qualities. The Buddhist monks, not unlike their colleagues in other parts of the world, are the most expert brewers of this beer.

The invention of distillation, which results in beverages with higher alcoholic content, is a matter of speculation. Perhaps the rays of the tropical sun, heating a vessel containing wine, caused small drops to accumulate on the inside of the cover and these drops were found to be of a more concentrated nature than those in the container. With



KIRGHIZ STILL

After K. Weule

the elongation of the cover and the addition of a cooling system for the alcoholic vapours, the distillery apparatus was created. This is the way the natives of the Moluccas make brandy from palm wine. Java, Siam, Ceylon, and the Malabar coast are the regions where more intricate distillery apparatus have led to the manufacture of multiple types of brandy.



KUMYSS-BAG

Horse-skin
Yakuts

After A. Byhan

Missionaries of the year 1253 mention the famed *kumyss* brandy made in the immense territories from the Buryat Mountains in central Siberia to northern Tibet and in the Kirghiz region. Marco Polo tasted it on his travels. Abul Ghazi described it in 1251 as "clear like doubly distilled corn brandy." *Kumyss* is made from the milk of camels and donkeys and is fermented with lumps of butter.

Tales and poetry of primitive man are full of witticisms about drinking and drinkers. The Haya proverb that "the beer made by naked men is drunk by the dressed up" has a touch of social criticism—the rich enjoy what the poor produce.

The Kpando of Togo have the habit of flattering each other when their calabashes make the rounds. The last drops of drink are poured on the ground, and the guest gives his own drinking name, to which others add complimentary remarks. He may say "*Da tso mo*" (The snake crosses the path), to which the others add, "*Medzina kpo o*" (He is not afraid of the stick!). Another's name may be *Klongo* (Turtle Shell), to which his friends shout,

“ We are old turtle shells ! ” (No insect or small animal can hurt this smart creature, protected by its shell.)

There is wisdom in this drinking song of the Dusun of northern Borneo :

Large is the pool outside,
We don't get headache—
Small is the pool in the house,
And we get the headache.

They may drink from a pool of water in the field, explains the explorer Staal, without feeling ill effects, but the little pool in the house, namely, the vessel filled with wine, gives them a headache.

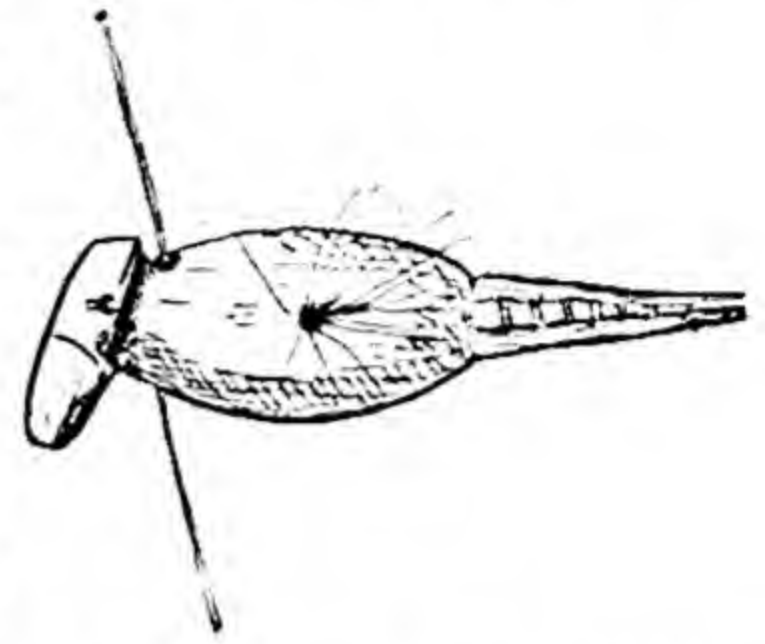
Indeed, since the times of Anacreon and Li-Tai-Po, the song of the wine has been sung by the poets of all ages. The Aztec god, Xipe, was known as ‘ the Nocturnal Drinker.’ The drinking of *pulque* was restricted in the oldest times to the venerable ‘ old men and women,’ except during the great Tecuilhuitontli feast, when all men, women and even children were allowed to enjoy it without restriction.

Four different kinds of beer were brewed in the Egypt of 2500 B.C., and the story of the ‘ divine ’ origin of the beverage dates back to 4000 B.C. One ancient tablet covered with hieroglyphs reads : “ Do not let the drinking of beer overtake thee, thou falleth and breaketh thy bone and none tends his hand to thee, thy companions keep on drinking and say, ‘ Away with him who is drunk ! ’ ” How similar are these words to their modern version heard by the author in a small American Negro church : “ Do not be a can which the Lord opens only to find beer in it ! ”

The excessive consumption of beer seems to have been common among Egyptian students, judging from what a scholar wrote to his pupil long before the birth of Christ : “ I am told that thou leaveth thy books and thou abandoneth thyself to pleasure ; thou goeth from street to street every evening while the smell of beer chaseth men away from thee and ruineth thy soul. Thou art seen climbing walls and breaking into houses ; people flee from thee and thou injureth them.”

However, we would not do justice to the good times enjoyed by the members of the human race if we should consider eating, smoking, drinking, and the like as the only elements of joy and entertainment. Dances, games, and sports events are often held for the sake of their own virtues, and the generally playful attitude of primitive man expresses itself in many activities of a thoroughly sober nature.

Even the primitive child comes into its right. All peoples on earth brighten their youngsters' early years by the invention of toys, which are created either for the sake of play alone, or for an educational purpose. The African Pangwe children play a 'marble' game with round pebbles. Palm nuts are their ninepins. They have dolls, pea-shooters, whipping-tops, string-pulled puppets, magic games and puzzles, stilts, diminutive crossbows, animal traps, and drums. They pull tows and run races—in short, they have all the possessions a happy child could ask for.



WOODEN BIRD 'DANCING' ON BOW-STRING

Toy from the Santa Cruz Islands

Museum of Ethnology, Basle (after Speiser-Foy)

As for the dolls of the wilderness, the models made by the Choroti Indian women for their little girls are among the strangest. Often the head of the doll is so tiny that it is hardly noticeable, and consequently they distribute the face tattoos all over the body. Since the children of the wilderness

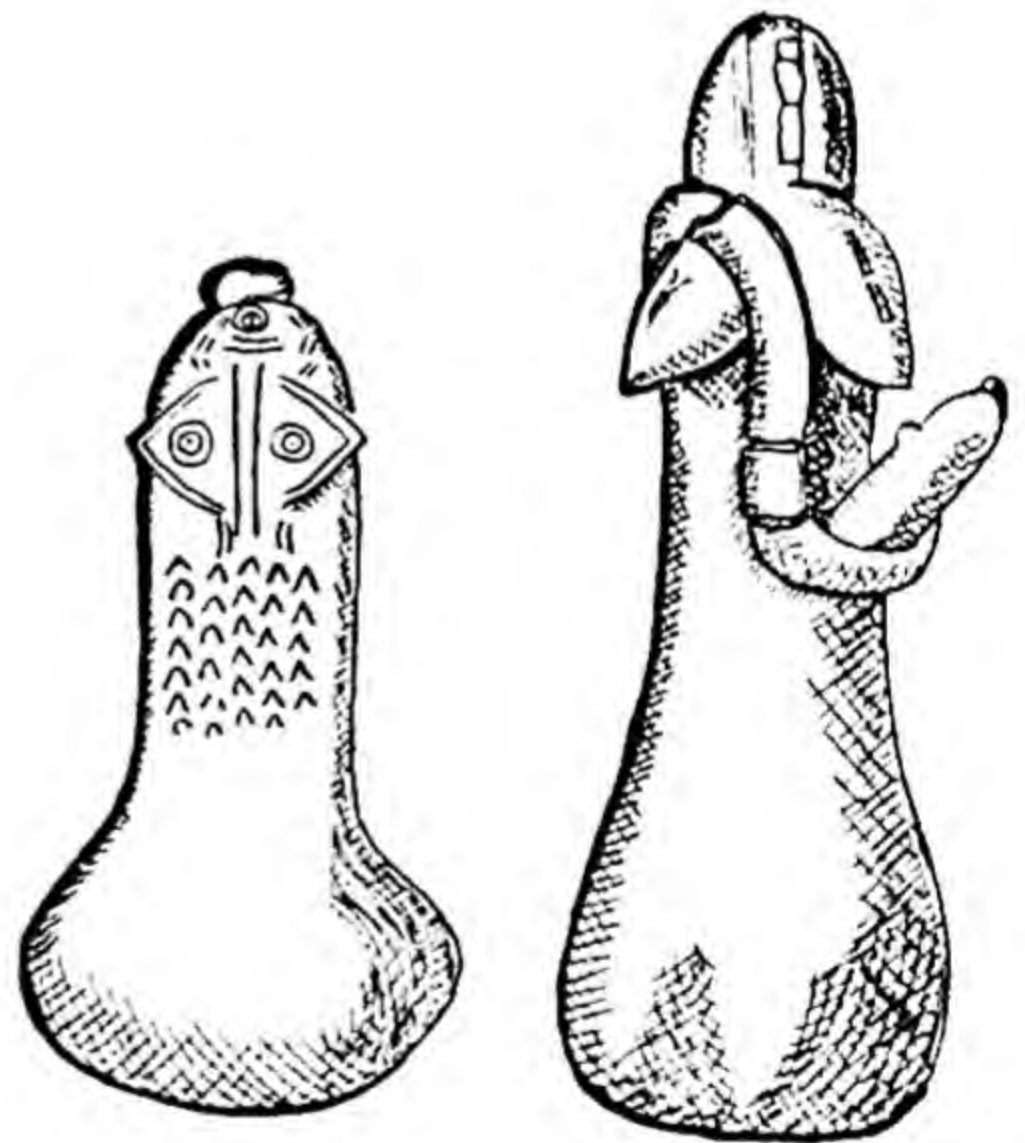
DOLLS



Dolls of Elm Bark and Willow Withes

Chippewa Indians

After F. Densmore



Clay Dolls of the Choroti Indians

'Woman'

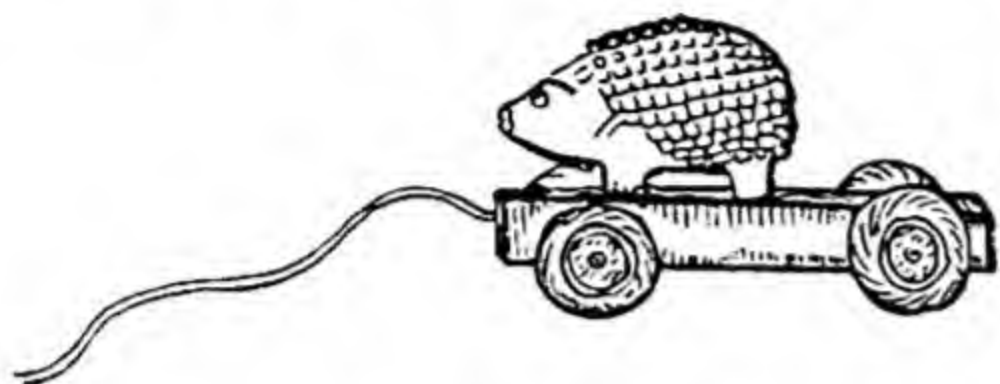
'Woman with Baby Girl'

Rio Pilcomayo, Bolivia

After Nordenskiöld

are accustomed to the sight of the naked human body these dolls leave nothing to the imagination.

Equally realistic were the dolls of ancient Egypt, which featured movable arms, and wigs of woven hair, interwoven with tiny clay balls in imitation of balls of grease typical of the coiffures of the Nubian housemaids. Another favourite toy was 'the baker at work,' a movable human figure mounted on a board. When a string was pulled the man moved a lump of clay back and forth, 'kneading the dough.'



TOY HEDGEHOG

From the Ruins of Susa,
2000 B.C.

Louvre, Paris

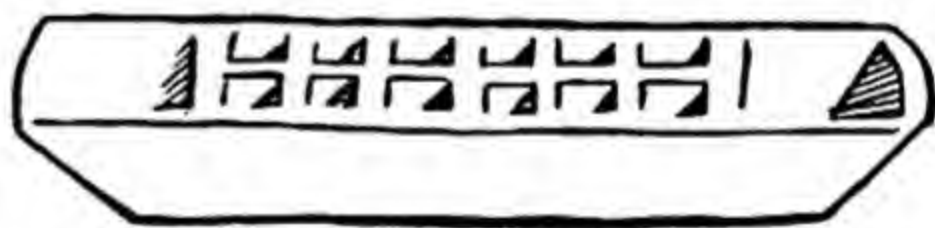
Dolls' houses with tiny furniture including mirrors and movable chests of drawers were built for the Egyptian offspring. They had animals drawn on strings ; crocodiles with movable

jaws. Preferred animal pets were monkeys and birds like the hoopoe, with its spectacular head-dress.

The games of the grown-ups all over the world are as manifold as human imagination itself, with perhaps dances predominating. But even very primitive tribes, like the Australians, feature wrestling matches, spear-throwing contests, ball games, and, especially, the string games which are also known in Polynesia, America, Africa, and many other places of the world. All parlour games we can possibly imagine have their primitive prototypes and equivalents, from memory games to games played on boards and often based on chance—games which can ruin a man in primitive currency as easily as the white man's horse-races. Perhaps the best known of all these games is the *mankala* game, common to practically the entire African continent.

The Ubangi tribes, who are fanatic enthusiasts of the *kuka* game, lose loads of cowrie money snails during their feverish sessions, which are exclusively 'stag' affairs, because, as the explorer Leyder puts it : " The women do not play. They haven't got the time."

Some primitive tribes even play games at funerals. The spirit of the deceased is supposed to take part in determining the winner and the loser. This custom is especially developed among South American Indian tribes. One such game has been very vividly described by the ethnologist Karsten :



GAME BOARD

Pangwe, West Africa

After G. Tessmann

The rest of the night is spent in playing another kind of game, with burning balls of cotton. Upon the board which was placed on the stomach of the dead Indian a small cotton ball is made and set on fire. The playing men arrange themselves on both sides of the corpse and blow the burning cotton hither and thither upon the board, keeping the small ball in constant motion. Each player who finds the ball in front of himself immediately blows it to the other side, from where another player blows it in another direction, and so forth. The aim of the game is to nullify all dangers of contagion proceeding from the dead body, since it is feared that the disease-demon may carry off other persons among the relatives surviving.

This sombre purpose, however, does not prevent the participants from full enjoyment of the fever of the game. The general South American custom of making a feast for the living out of the memory of the dead is strong even in to-day's modern cities. There is not much difference between the 'food offered to the dead on the Day of the Souls' by the Quiche-speaking Indians of Ecuador and to-day's modern Mexican habit of selling candy skulls with fancy sugar decorations on the streets on the 'Day of the Souls,' gifts fondly exchanged by lovers, with their initials in sugar on the top.

The frigate bird of the South Seas also furnishes many opportunities for joyous sports. Although its keeper is a 'holy' man, who wears his feather bracelet as the mystical 'husband' of the spirit of the soul bird, as the Doge of Venice wore a ring as husband to the sea, the frigate-bird worship is a popular sport, especially among the islanders of Náoero. The birds must first be tamed. Property marks indicating their individual owners are cut into their wings and tails so that they can be easily recognized while in the air. The whole neighbourhood gets excited when a new bird has been tamed. '*Öréita ména*' ('Now he begs') is a call of joy. The owners carefully feed the birds with fish, and give them drinking water from their own mouths. When they are tame enough to be attached permanently to their masters they are let free again. Then they can take part in contests with other birds, in which the height of their flight and similar skills are judged.

Most birds of the islands—and there are many species—are tamed and trained by the native sportsmen. Among them is the nocturnal *éderakui*, whose name has become the nickname of native Don Juans. Cock-fights, pig-fights, and fish-fights are the order of the day. Although dragon-flies are 'reincarnations of the departed,' the children tame them and keep them near home on a

branch of a tree, from which they attack any fellow dragon-flies flying by, to the great joy of the onlookers.

This type of game is a regular sport, but in primitive pastimes the border-line between play and sport is often hard to draw.

The simple sport of walking is not popular. It is too natural to be noticed. Even if primitive hikers, often heavily laden with bulky packs, walk great distances over difficult terrain, they are not considered to have achieved a record. Running also evokes little admiration. It is too necessary for earning a livelihood to be regarded as a special sport by peoples who run a game animal to death in steady pursuit, like the Australians, the Bushmen, and the Hottentots—with whom, Peter Kolb reported in 1719, no man on horseback was able to hold pace. Other extraordinarily gifted runners are the Tarahumare who live in the Sierra Madre Mountains of northern Mexico. They are recognized even by other tribes as *ralamari*, or runners. They can run distances of over two hundred miles without stopping. The Geri, who live on Tiburon Island in the Gulf of California, can run a strong deer to death. They are able to catch up with a galloping horse within a short time. They train from earliest childhood, and their slender, well-proportioned bodies and the sheer love of their own strength make such performances possible.

Climbing, in which similar astounding records are set, also is not recognized as a sport in primitive societies, although the climbing abilities displayed in reaching fruits in the tops of tall trees, taking eggs from birds' nests, cutting wild honeycombs, etc., are often so impressive that even onlookers of similar skill reward their best men with expressions of special esteem.

The sport that most attracts primitive fans is high jumping, which the Watusi of East Africa, a tribe of exceptionally tall and slender build, consider the expression of admirable virility. No young man who cannot jump as high as his own body measures is accepted as grown up. Using low termitaries and similar objects as jumping boards, they reach heights averaging eight feet without effort.

The throwing of objects is the favourite sport of many peoples, with the stone perhaps the oldest discus. The sure hands of these skilled hunters and the very nature of many of their weapons train them to early mastery in this sport. The connoisseurs among the North American Indian spectators value the finesse of the player and his skill and versatility much more highly than the actual strength he displays. Pieces of sugar-cane, beaver teeth, nuts, or lumps of clay are used as darts, and fixed rules determine the course

of the play, in which two groups compete against each other. Among the Zuñi the *showialtowe* dart game is of ceremonial significance, its equipment being consecrated on the altar of the war god, the patron saint of the game.

The boomerang, that ancient hunting and sports tool of the Australians, migrated also to other parts of the globe. It is found among some North American Indian tribes, in India and in Egypt, where whole army divisions were equipped with it until the end of the nineteenth century. The spear duel, often customary as a method of deciding inter-tribal feuds, is regarded as a supreme expression of sportsmanship in the Fiji Islands, in America, in Africa, and in New Guinea.

Among the sports which are a source of joy to the high cultures, as well as to the most primitive tribes, are wrestling matches, which draw thunderous applause everywhere, from Australia to Brazil, from Africa to Finland, from Polynesia to the Caucasus, from south-east Asia to Japan, where the *sumotori* rank among the national heroes.

Boxing is equally cherished in all forms of civilization. The native king of the Tonga Islands ordered boxing matches to be held at regular intervals by his subjects. The primitive boxing glove is either non-existent or is a thick string padding. On the Mortlock Islands shark's teeth turn the boxing hand into a dangerous weapon—the man who falls down first is the loser. Even umpires are known at primitive sporting events. In Hawaii he interferes when unfair moves are made, or when the fight lasts too long. He separates the fighters with a wooden stick.

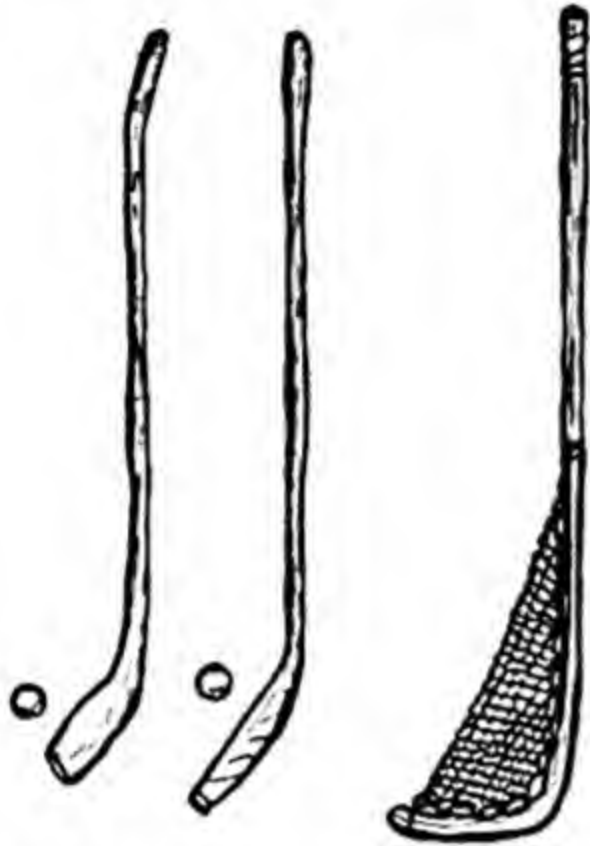
Swimming is not regarded as a sport, but surf-riding on wooden boards leads to keen contests on the Polynesian Islands, the winner being the man who first reaches the beach without toppling over.

Perhaps the most popular sport of all is the ball game, that age-old favourite of Indians, Negroes, Europeans, and Egyptians. Most of our well-known games have their roots in primitive tribal ball games. These games often had magical or symbolic meanings—an evidence of their venerable age.

When the whaling season draws near, the Makah Indians play hockey with a whalebone for a ball and a bat symbolizing the war-god's club. In an ancient Aztec codex, the gods of light and darkness play ball with each other; and it was one of the duties of the ancient Mexican rulers to watch, at midnight, the stellar constellation of Ursa Major, known to their people as the 'ball-play arena of the stars.' Ball games, especially of the North American Indians, are so various that they are worthy of study in themselves.

Lacrosse and other two-goal games, such as shinny and pogatowan, use balls of different sizes and shapes. Most often they are made of soft leather such as deerskin, and stuffed with grass or plant fibres. The prototype of the European soccer ball is the football of the Eskimos, made of stuffed hide and about the size of the college model.

The balls of ancient Egypt consisted of two hemispheroidal shells of leather or fine linen, stuffed with straw or finely cut reed



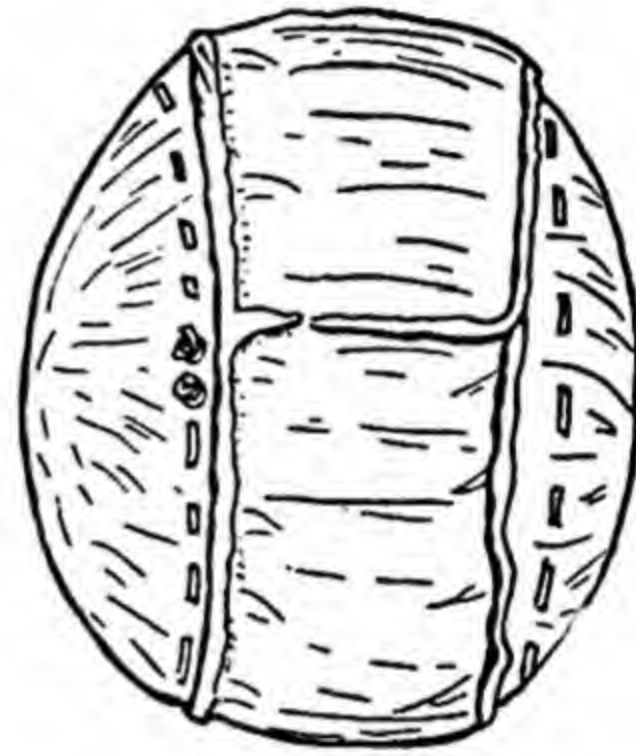
(1) SHINNY BALLS
AND STICKS

Mono Indians

(2) RACKET

Passamaquoddy Indians

*Field Columbian
Museum*



'KICK BALL'

Mandan Indians

After F. Densmore

and sewn together to form a ball of about four inches in diameter. Smaller balls of multi-coloured siliceous earth were very fragile and brought out the dexterity of skilled players.

The difference between mere pastimes or entertainment and regular feasts and celebrations was sharply developed in the high cultures. Victory celebrations, anniversaries, weddings, religious and national holidays are held at set dates and can be determined in advance, a mental and time-conscious approach which is completely alien to the primitive mind. All the different ways in which the general, spontaneous, and indefinite good times of the children of nature express themselves informally are co-ordinated in the great official celebrations of the classic and pre-classic times. Pompous parades, dances, shows, games, eating and drinking feasts are combined in great celebrations. These celebrations are sanctioned by Church, State, and society.

The Chibcha divided their year into three well-defined parts,

one of which was dedicated to feasts. For the Mohammedan, the time of joy begins after the Ramadan; for the Catholic, it ends with Ash Wednesday. The feasts of civilization have been coordinated by plan. Whoever the host—family, group, club, government, Church, or nation—planned and purposeful convention has entered our merry-making. This may make our parties and feasts more glamorous, but whether it allows them to equal the spirit of gay improvisation, the hilarious joy of being happy for the sake of happiness that characterizes the blissful gathering of the jungle and of the prairies, we may well wonder.

Jim Boy Buchanan

CHAPTER SEVEN

On the Roads of Land and Water

WHEN OUR GLEAMING cars whiz over the highways, when our railways carry speed-breaking trains to their destination, a feeling of high achievement often inflates the ego of the modern traveller. We are 'going places.'



BLACKFOOT TRAVOIS

American Museum of Natural History, New York

Yet, although the vehicles of our travel and their speed would, even a century ago, have seemed fantastic, the use and construction of roads which bring the immense distances of the globe closer together—the roads of strategy and of trade—belong to the oldest achievements of mankind. The necessity of using an important trail again and again, whether it was the path to the next water-hole or the caravan route over mountains and through the desert, has

created streets of venerable age. When a path was cleared through jungle growth, rocks, trees, and other obstacles, precious time could be won. The places where food and water abounded could be reached more quickly, and travellers were protected on their journeys to the trading places. The danger of being lost in the wilderness was considerably reduced when directions were confidently marked by roads; neighbours could be visited and new areas explored. The great migrations of peoples and the transmittal of cultural elements were facilitated by the roads. Roads are the great symbols of peace or war, the bonds between men and ideas since the dawn of time.

Along these all-important arteries the traffic between tribes and peoples, between villages and markets, between the coast and the interior, pulsed in the olden times as it does to-day. The story of the great roads of history is the story of history itself.

In Africa the caravans and safaris have moved from Lake Chad and Timbuktu to the North Coast, from the Nile and Niger through the Sudan where Sokoto, Kano, and similar centres of trade attracted the merchants. Legendary is the ancient road from Egypt to the Columns of Hercules. The entire Dark Continent was and is to-day lined by a network of trails from the Mediterranean to the interior.

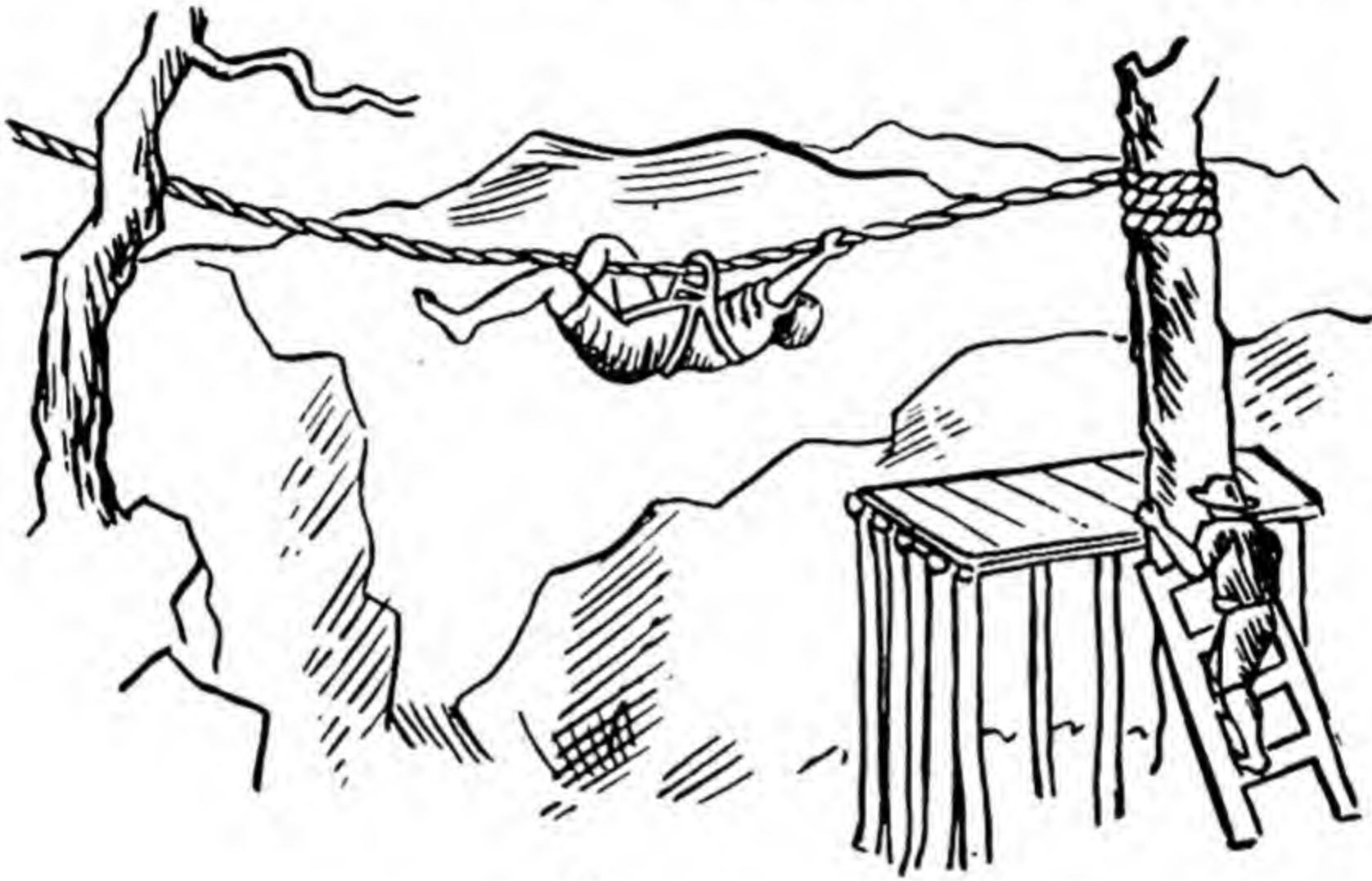
In Europe the Danubian culture of prehistoric times sprang up along the banks of the proud river and became the centre of cultural exchange through the millenniums. The ancient 'salt streets' of Europe which enabled the distribution of the mineral from the mines to the trading centres of the interior have maintained this name even to-day—Reichenhall and Halle on the Saale were their terminals, and the Danube, the Elbe, and the Loire were their trade routes.

In Asia Minor the road from Baghdad to Basra is of immortal memory since the tales of the Arabian Nights; and on the roads between the Ural Mountains and the Caspian Sea waves after waves of migrating peoples streamed into Europe. Marco Polo's travels followed the ancient 'silk roads' from Samarkand to the Hindu Kush, from the Gobi to Peiping. On these silk roads the precious Chinese fabric moved from Central and Anterior Asia into the Roman Empire. Trade relations between them began in 114 B.C. Ptolemæus reports that the travel from Liangchow, then the capital of China, to the Pamir Plateau took seven months.

In America the great trading expeditions of the Mayas moved every year over great distances. The natives even mapped the famed road from Xicalano, through the primeval forests to the

gold regions of Honduras, on which Cortes moved during his adventurous expedition of 1524-25.

Primitive trails are not so spectacular, but they are certainly equally old or older. Having more the character of direction markers than of roads, their course is largely determined by the difficulties of the country; they wind through the continents in short cuts and mountain passes, as the terrain allows. The covered wagons of the American pioneers travelled the ancient trails of the red man; many state and federal highways follow old Indian paths.



TOW BRIDGE

Peru

After K. Weule

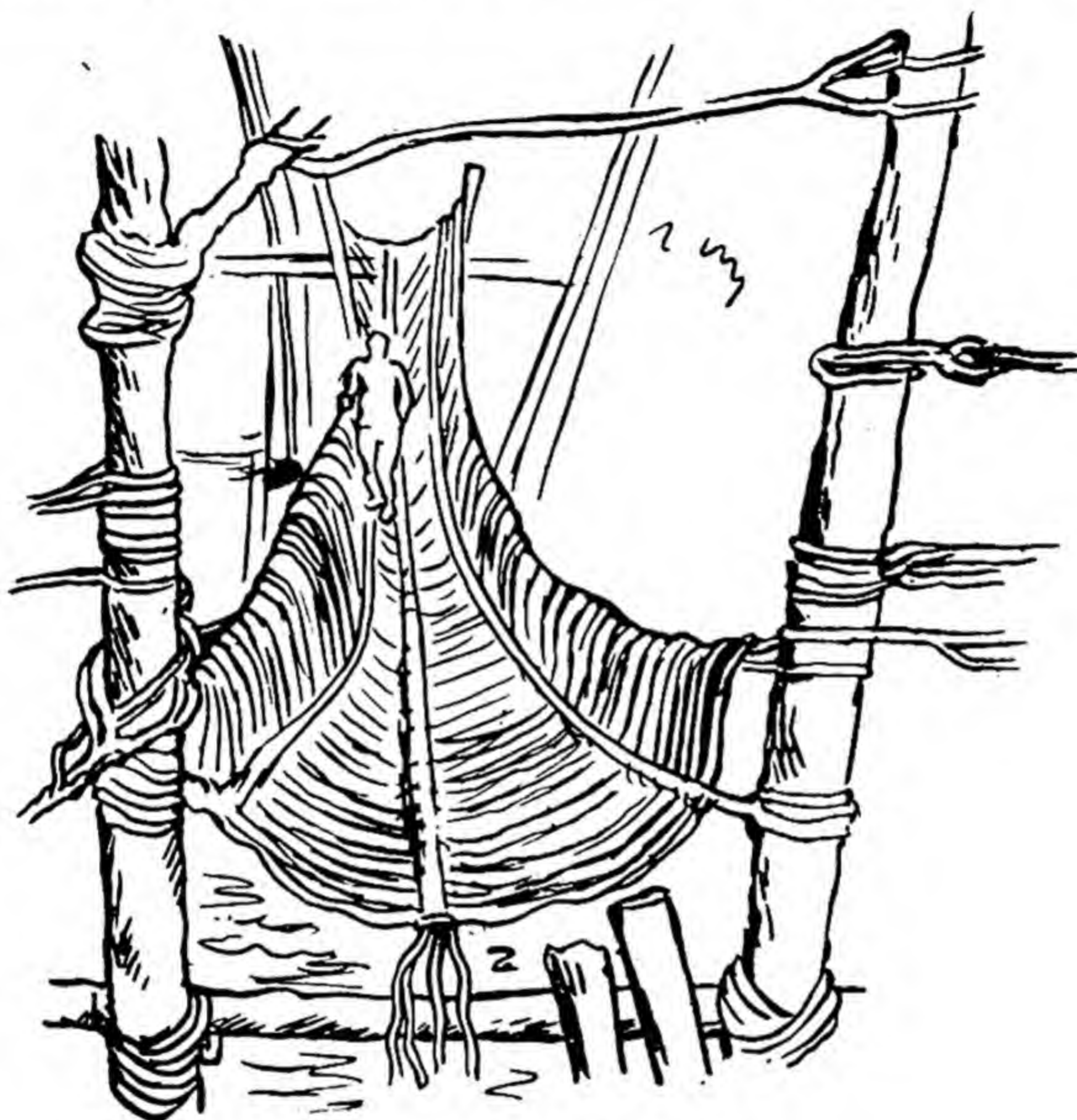
The Louisiana road from Chinuba to Lake Pontchartrain is still known as the Indian Road, and a highway in Colorado is laid on the Sante Fé Trail.

We saw that the great rivers of the earth are important determinants in the migrations of goods and men. The names of the Nile, Hwang Ho, Euphrates, Tigris, St Lawrence, Missouri, Mississippi, and Amazon are closely related to the history of mankind through the millenniums. The river roads stimulated mercantile exchange and created cultural centres. The rivers of the Lower Congo have transformed whole tribes into trading peoples—a phenomenon repeated all over the globe.

To connect these mighty water roads by the building of canals is one of the earliest architectural achievements of man. Great was the fame of the Emperor Yang-ti (605-618) whose experts constructed the glorious Emperor Canal. In the regions of the Amazon early efforts solved the problem of the annual floods by

building numerous canals, especially in the Mojos province, and modern scientists are inclined to believe that the mighty waterway between the Orinoco and the Rio Negro is the work of human hands.

While rivers and waterways may connect countries and peoples, they are often apt to hinder the traveller who must cross them to



LIANA BRIDGE

Guatemala

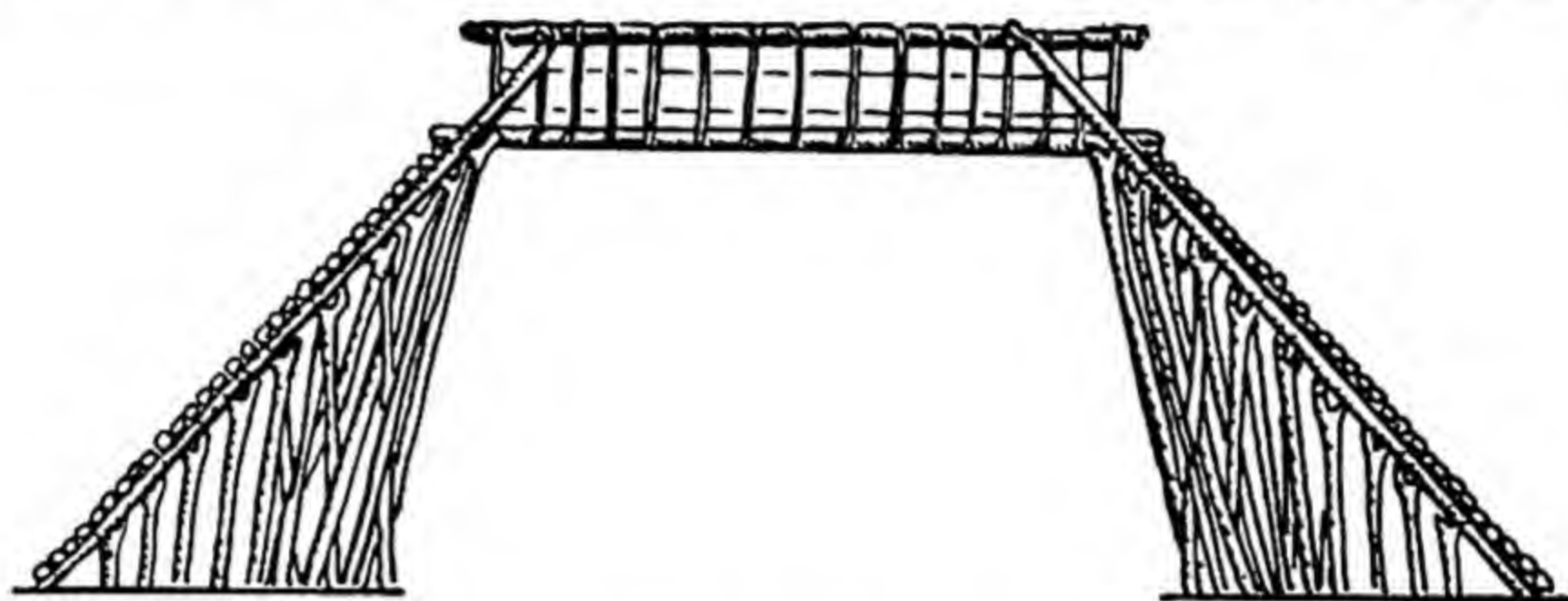
After Sapper

reach his destination. To overcome this drawback, and so extend roads even over intersecting waters, man invented the bridge. Primitive tribes have worked out many methods of getting over rivers and abysses, methods which vary from the simplest devices to structures of great technical complication and stability.

In the rocks of the Himalayas primitive herdsmen have hollowed out holes in which the traveller inserts bamboo rungs to climb either upwards or downwards, slowly and perilously. Bamboo canes may be used to bridge an abyss. Tows of yak hair are affixed from tree-tops on opposite sides of a stream and used like bos'un's chair rigs, with the traveller hanging from a stick or small

woven seat attached to the tow. The tow bridge fixed on both sides of an abyss is a customary device used by Peruvian Indians of the Andes. The Aymaras of South America build floating bridges; the Huari balance forward on bamboo poles laid across a stream, and the Quiche use cantilever constructions. One or two lianas, spanning a river, are used as bridges by the Botocudos and Siriones.

Among the finest achievements of primitive bridge builders are the famed interwoven liana bridges of complicated structure which can be found as a cultural property of many tribes of Melanesia, Africa, South America, India, and Indo-China. Such web-like



POLE BRIDGE

Chibcha

After Bolinder

bridges are solidly interwoven and have the shape of a long, semi-circular basket, the sides of which reach to the hips or shoulders of the passer. Trees or poles rammed in along the shore serve as anchoring posts for the liana bindings which are often also attached to rocks or tree trunks protruding from the water. A firm rail prevents the traveller from being swept off his feet by the current.

The simplest wooden bridge is naturally the felled trunk laid across a small brook, but when the river is broad magnificent timber structures are erected, with complicated spans balancing over forks and poles. In the Cameroons, in Melanesia, and in Colombia the intricate shapes of such structures are surprising in their symmetry and architectural beauty.

Over land and water, over trail and bridge, thus travels man, to carry himself and his goods and provisions to his place of destination. For mountain-climbing, walking canes are customary, but in regions where the great wood-carvers live, for instance in Africa and on Borneo, simple staffs soon assume more pretentious shapes and become insignia of rank or even expressions of magic powers.

When it comes to the carrying of loads, there is no people on earth which does not know of some method to make burdens easier

to handle. Head loads may be supported by woven rings or by stuffed pads, and the weight of the burden carried on the back may



AZTEC CARRYING DEVICES

After Codex Mendoza

be conveniently distributed over the entire body by the carrying strap, head-band, or tump-line. This carrying aid is especially typical of Asia and of the North and South American Indian tribes, but it also occurs in Africa. Mostly, the tump-line is attached to a basket supported on the back, or to a ladder-like structure such as the *cacaxtli* of the ancient Mexicans, whose head-band was called *mecapalli*.

Burdens on the back are not necessarily lifeless—the Asiatic and North American manner of carrying babies on the mother's back is comfortable for both. South American Indians often prefer to carry their babies in a broad woven band slung round the mother's shoulder, but they also use ladder-like frames into which the baby is laced during the mother's wanderings. The large amphoras of the Incas featured two special handles near the bottom, through which strings could be slung to make it possible to carry the huge vessels on the back, instead of in the customary manner—on the head. But while in earlier cultures the human beast of burden is a general sight, since the carrying of heavy loads is the lot of all mortals, the feudalistic caste of the ancient high cultures look down upon their poorer brethren of the burden-carrying lower caste. Many a noble Singhalese wears curved combs



CLAY VASE, SHOWING
CARRYING METHOD
OF CUZCO AMPHORA

After Bässler

(1)



INDIAN WOMAN
CARRYING BABY
ON TUMP-LINE

(2)



THE TUMP-LINE IN ALASKA
AND MEXICO

(3)



MOBALI WOMAN
CARRYING WATER
Belgian Congo

*American Museum of Natural History, New York: (2) after drawings
(3) after a photograph*

on his head to demonstrate that his people have never borne burdens on their heads.



'COOLIE' YOKE
Mexican Indians
After Oviedo

The simplest hand luggage is the carrying net known to very many peoples, especially in America; leather bags are its equivalent in Africa and Asia. The braided and woven bags and baskets of all kinds, the conical burden baskets of Asia and America, and the square, stiffer African varieties, all serve the same purpose: to keep goods together and to facilitate their transport.

The carrying beam or 'coolie' yoke is of very ancient origin. It consists of one long piece of strong wood balanced on the neck and counter-weighted by loads suspended at either end. Since the weights of these loads must be equal for the sake of balance this device is best suited for water-containers of identical shape and size or for identical bundles. Its classic place of origin is Asia, but the discoverers of South America

found it among the natives of some parts of that continent; and Nordenskiöld tells us of the sufferings of the Indians when the Spaniards forced them to carry loads on their back rather than on the yoke as they were accustomed to do.

The beam, on which two or more men carry between them a suspended load, applies another technical principle and allows the easy handling of all kinds of heavy objects, from the carcasses of hunted animals and heavy signal drums to the bodies of the departed. This method of transportation is common in Africa, Asia, the South Seas, and some South American regions.

The privilege of being carried about by one's fellow-men is enjoyed only by rulers, dignitaries, and persons whose sight is to be hidden from their surroundings for some reason or other. The litter in which such distinguished riders are carried was developed from the carrying beam. A settee or hammock is attached to two or four poles which are supported by the footmen. In Africa, where great stress is put on any device accentuating the dignity of the mighty, litters are still the favourite travelling 'coach' of the chieftains, princes, and the mighty whites; and in China it is the privilege of high officials to be carried about in this fashion. In the Chinese South it is the traditional mode of travelling for all who are entitled to higher standards of living.



CHINESE BAMBOO
LITTER

After K. Weule

In another region of the world the caciques of the Chibcha were thus carried about in hammocks by their slaves. The reigning Inca of Peru was so 'holy' that none of his subjects was allowed to see even his face. To protect his godlike countenance he travelled in a closed litter, preceded and followed by runners, who had to remove all obstacles from his way. The 'curtain before the throne,' which originated from the same conception, is a sacred tradition of Egypt, Abyssinia, and other African regions as far south as the Pangwe. This desire to hide the face of sacred or revered persons developed the litter into the sedan chair, a closed compartment carried in the ancient way. It was in common use from the times of the Babylonians and Egyptians to classic Rome, where especially the noblewomen travelled in this fashion. After the Crusades it penetrated the rest of the Occident, where it became fashionable during the seventeenth century as the *porte-chaise*.

The motive power in all these cases is the human body—and the weight of the burden falls most heavily on the foot. Although not

many primitives of the warm zones feel the necessity to protect their feet from the strain of walking, the desire to improve their speed or to make their footprints as indistinguishable as possible led to the invention of multiple kinds of primitive foot-gear. There is reasonableness in the view of the ancient explorer Mason who



SKIS
COVERED WITH
REINDEER SKIN

East Yaks
*Museum of
Ethnology, Hamburg*
(after A. Byhan)

calls the shoes, sandals, and moccasins of primitive man the first actual means of transportation. Where the sand of the desert is too hot to be touched with naked soles, or where sharp stones would cause injuries, protective foot-gear is customary. For instance, the Indians of the torrid Roroima region manufacture sandals from the leaves of the *Mauritia* palm. Perhaps the most ingenious variety of the primitive sandal is the sprinter's model of the South African Bushmen which protects their feet from the hot sand of the Kalahari and prevents them from sinking too deeply into the loose ground. Such sandals are part of the regular hunting outfit of those tribes whose members are able to pursue game by foot, chasing it incessantly for days without allowing the animal to rest or feed, until it breaks down from exhaustion.

While the sandal improves the safety of the human foot on the bare soil, creepers or skates make it possible to 'run' on the surface of the ice. Since palæolithic times Asia and Europe knew skates manufactured from bones. The Edda, that ancient literary document of Nordic Europe, mentions the 'ice bone,' from which, during the thirteenth century, Holland developed wooden skates with iron blades. The all-metal skates of our days were designed in 1850 in America. Not unlike the ancient bone skate is the Eskimo creeper, carved from walrus tusks, which is tied to the boots when the hunter approaches his prey on the ice.

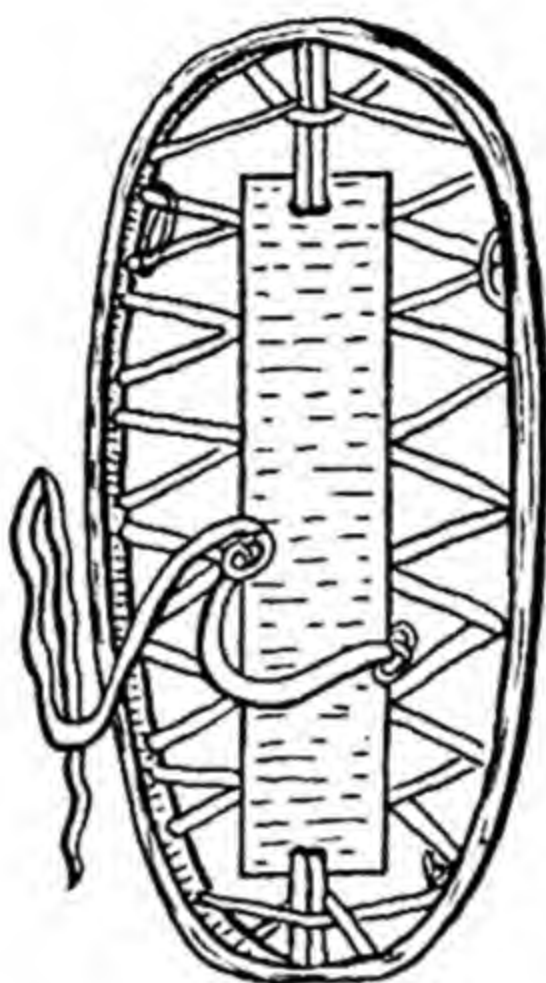
To glide on the snow rather than on the ice is the purpose of skis, whose prototypes were the 'sliding woods' of the Bronze Age. In the far north of Europe and Asia skis were developed into forms not unlike our present-day models, with the foot of the wearer resting on birch-bark platforms and the lower sides of the gliders covered with the skin of reindeer or seal. They are used with the

additional aid of a pair of ski poles with bone points and small laced hoops at the ends. The skis of the Lapps are longer and broader than these early models, without fur coverings and in appearance much more like our modern skis—whose development as sporting rather than hunting gadgets originated in the Norwegian hills of Telemark. The ski is not among the cultural possessions of the American primitives.

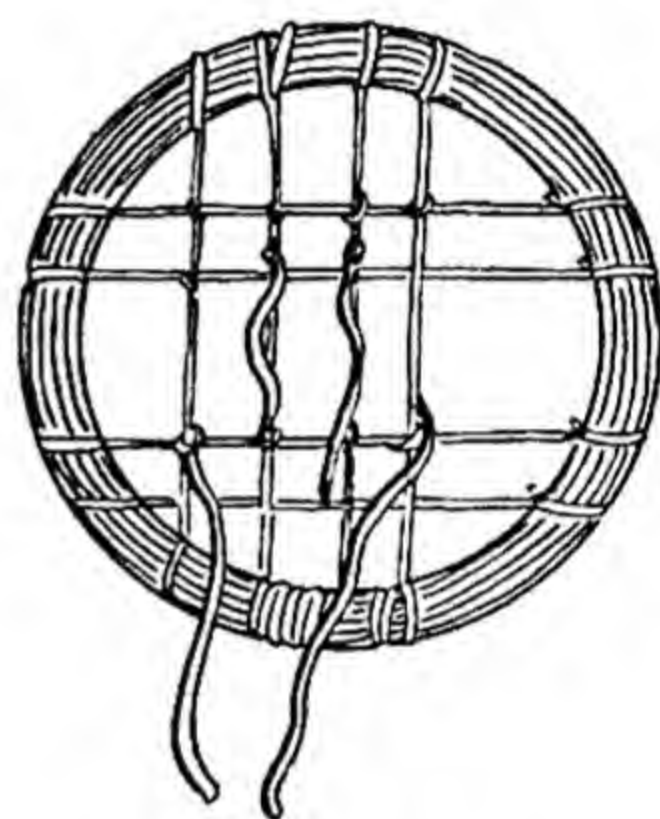
SNOW-SHOES



Montagnais-Naskapi
Indians, Labrador
Collection Julius E. Lips



European Alps
After G. Montandon

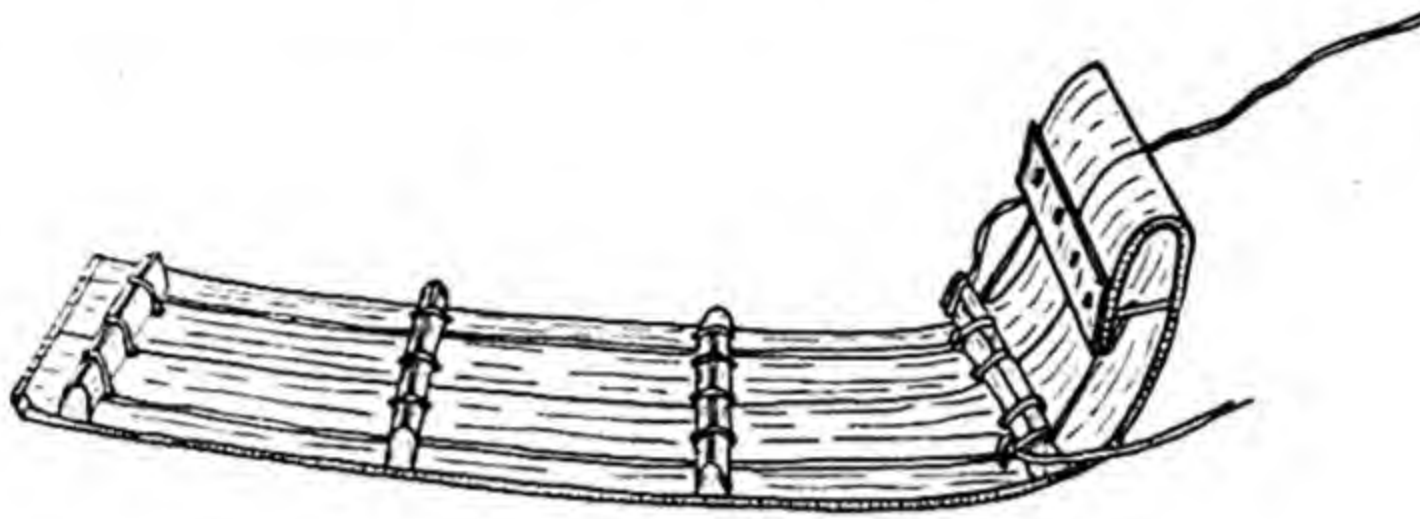


Eskimo of Baffinland
After F. Boas

While the ski emphasizes the idea of speed, another arctic invention, the snow-shoe, is dedicated to the purpose of walking safely over the deep snow. This foot-gear is of the greatest importance in all arctic regions of the world. Originating in Asia, the 'snow-shoe culture' reached America even before the Eskimos spread out over the northern sector of the continent, and its dissemination reaches as far as northern California. With it travelled the moccasin, that foot-gear of soft leather on which the foot of the hunter is anchored to the centre of the snow-shoe by lacings of leather strings. The arctic regions of the American continent have indeed become the classical centre of the snow-shoe; the much cruder European models do not measure up to intricate American varieties.

Among the hunters of the interior of Labrador the Naskapi are among the best-skilled craftsmen of snow-shoe manufacture. The wooden parts are carved by the men, but the lacing is women's work. It is fascinating to watch the manufacture of a pair of *asham*.

For the frame, a stick of birchwood is softened in hot water and then bent over the knee into an arch. To force it into the right shape the two lower ends that later form the 'tail' are firmly tied together with leather strings, while the centre is held open by a strut. The average length of a Naskapi snow-shoe is about three feet, the width at the broadest part about two feet. When the frame is dry enough cross-studs are attached to the frame, and rows of holes are punched into it with the bone drill. The lacing of moistened caribou-leather strings is run through the holes by the women in a regular pattern of firm interwoven meshes, with an exactness and care that result in finished products of perfection.



TOBOGGAN

Montagnais-Naskapi Indians, Labrador

Collection Julius E. Lips

Finally bands are attached to the centre in a series of intricate loops that hold the moccasin-clad foot of the wearer firmly in place.

The hunter, thus equipped with snow-shoes, invented ages ago the oldest device with which to haul his weapons, his provisions, and his prey over snow and ice: the sledge. Its earliest use was probably preceded by dragging things on animal skins. Dragging home killed bear, moose, elk, or reindeer probably suggested the utilization of their skins for similar purposes of transport. But soon flat pieces of wood replaced this crude method, and the sledge was born. Neolithic findings, especially, prove its venerable age. In the arctic regions of Asia and Europe, particularly in Finland and in the regions where the Lapp hunters roam, we find its oldest form, either simply a piece of flat wood or a simple construction of several boards. The toboggan of northern Canada touches the ground with its entire flat bottom. To the Naskapi it is the indispensable winter vehicle for hauling burdens of all types over the snow: small children, bagged game, firewood, and the bodies of the departed on their way to the grave. The building material is birchwood split into boards of about fifteen feet in length

and twelve to fifteen inches wide. The two principal boards for the base are held together by four cross-pieces ; the upward-bent front part is shaped with the aid of hot water, and supported by a fifth cross-piece. Holes are drilled, and all parts are held in place by firm lacings with caribou-leather strings. When the Indians leave for the summer places in their canoes they store their toboggans in the tops of the trees on their hunting grounds.

Of a more complex form are the sledges equipped with runners used by the Eskimos and by some neighbouring Indian tribes, by the Samoyeds, the Gilyaks, and other peoples of arctic Asia. It may be assumed that the runner-type sledge, especially of the Eskimos, is a comparatively recent invention. Nordenskiöld traced its origin to the Old World. The original type of Eskimo sledge is probably the runnerless model still used by the Caribou Eskimos. Among the Scandinavian peoples of Europe the so-called 'summer' sledges transport timber over the sleek ground surfaces of their coniferous woods—a method which was customary in Egypt for the hauling of heavy loads over sand and other smooth surfaces.

A fully loaded sled or sledge constitutes a weight which can hardly be moved by the power of one man alone. It seems that since the dawn of time man had learnt to ease his burden by making use of the pulling power of his oldest domesticated animal companion, the dog. Dog teams pulled the sledges of prehistoric man as they pull the toboggans and other sledges in the arctic wildernesses of to-day. The dog's oldest pack companion was the reindeer, employed together with the elk in northern Europe and Asia as a beast of burden even in modern times. Reindeer were used for hauling before they were domesticated as dairy animals and mounts.

This holds true also for the members of the cattle family, the yak of Tibet being the oldest domesticated species. The water-buffaloes of China were domesticated later. Yokes for cows or steers have been found in the habitations of the European Lake Dwellers, those early lovers of comfort.

The horse, known in Europe in its wild form during the Palæolithicum, was used for the moving of burdens since the Neolithic period. Harnesses for horses have been found in the remnants of the 'band-ceramic' period. During the third millennium B.C. the horse came from Asia over Asia Minor to Babylon, to reach Egypt towards the end of the Middle Empire. The North Africans, those master raisers of thoroughbreds, began their famed tradition in 2000 B.C. In America the horse was unknown in pre-Columbian times.

In South America, long before the arrival of Columbus, the llama and the alpaca were the animal helpers of man as they still are. The range of Asiatic pack animals is wide indeed : dog, yak, horse, reindeer, camel, dromedary, zebu, elephant, ass, and even sheep pulled the vehicles of man from the dawn of time to our days. Not all peoples on earth, however, have learnt to make use of animal power for the purpose of moving their loads and burdens. Australia, the South Sea Islands, Japan, and entire Negroid Africa originally knew no beasts of burden.

The habit of riding animals is of a more recent date than their use for packing. However, ancient figures from the middle of the third millennium B.C. found at Kûl-Tepe show human beings riding on the backs of animals, and the 'horse-riding culture' of Asia is an exceedingly ancient one. In later times the North American Indians of the plains, and South American tribes like those of the Chaco, who rode their horses on straw-padded leather saddles with bone splinters for spurs, took to the horse so completely that they practically lived on horseback.

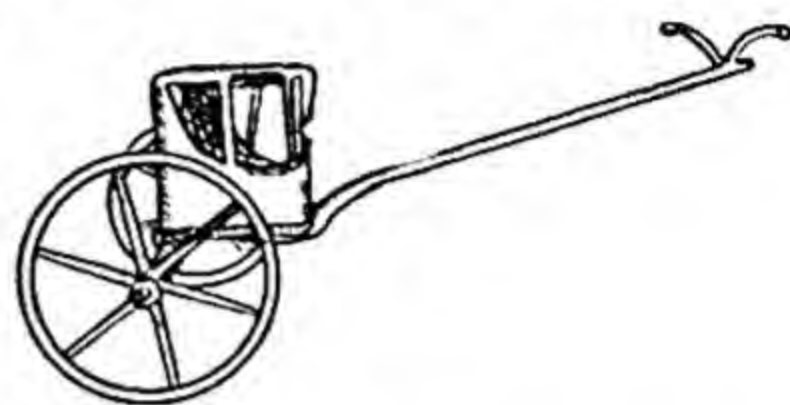
Among the tribes of the prairie, the horse replaced the dog which, in olden times, had pulled the travois, a structure of two poles on which a burden was tied, and which dragged on the ground behind the animal. The travois constitutes a very ancient method of moving bundles, tents, children, timber, and the like. Its Asiatic form, still in use by the Kirghiz, is pulled by a camel, which in addition to its burden also carries a rider.

It is a far cry from the bumping, bulky travois to smoother means of transportation ; and real comfort and speed could only be attained by that supreme invention in the field of transportation, the wheel, which is a creation of the high cultures and unknown to primitive man. By reducing the size of the surface that touches the ground and by the first application of a moving circular support, the friction caused by the weight of the load could, by means of the wheel, be so minimized that big loads were transported with comparatively small effort. Heavy objects, formerly 'immobile,' could now be moved by the power of man or by the power of the animals he trained for this purpose.

The first archæological evidences of the wheel date back to the Mesopotamian city cultures. It is assumed that the idea of rolling along a heavy object originated in the practice of sliding logs under the weight to be moved—a technique the Egyptians applied when they moved the cut-stone squares used in the construction of the pyramids. The oldest wheels consisted merely of solid discs of wood, firmly joined to an axis that moved with the wheels. Later

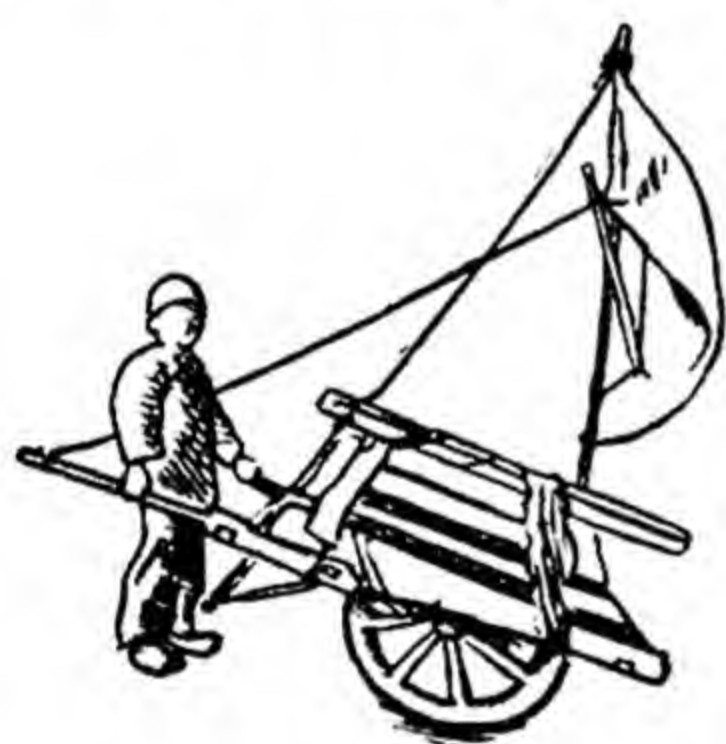
modifications resulted in the invention of the nave, or hub, and the hollowing of spaces in the centre. Gradually the intersections between the carvings became thinner and thinner, leading during the Bronze Age to the development of the spokes. Spoked wheels were known in Asia Minor as early as 2700 B.C.

While the cart for moving loads was a general means of transportation, the two-wheeled chariot was first depicted as a vehicle reserved only for the gods. When mortals began to appreciate its comforts it was reserved for the rulers, who later shared it with the wealthy. In classical times it was the beloved vehicle of noble sports. The mythical significance of the wheel as a symbol of the sun, of the deity, and of good luck has made it a preferred ornament; and the habit of celebrating the solstice by rolling burning wheels downhill or by throwing wooden discs into the air is a reminder of the manifold interpretations to which the wheel was connected with



EGYPTIAN CHARIOT
1400 B.C.

*The Gizeh Museum of
Egyptian Antiquities,
Cairo*



CHINESE WHEEL-
BARROW WITH SAIL
After M. Haberlandt

the supernatural.

The two-wheeled cart is older than the four-wheeled vehicle, while the one-wheeled push-cart or wheelbarrow, in China often equipped with a sail, is among the oldest of vehicles. In the Chinese South a one-wheeled litter facilitates the work of the carriers who merely steer and push it. In northern China the so-called 'great wagon' is used for long trips, with a tent-like structure mounted on two wheels. It reminds one of the famous covered wagon of the American pioneers.

In the wars of centuries ago the possession of wheeled vehicles was a decisive factor of strategy. To all students of classical literature the barricades formed by chariots and the wheeled Roman catapults and onagers are familiar conceptions that played important rôles in ancient history.

China is the place of origin of so many great and also quaint inventions that to many white travellers the Chinese ricksha is a 'typically Oriental' means of transportation. But to the Chinese it is *yang ch'e*, 'the foreign cart.' It is a modern American invention, just one hundred years old. The Baptist missionary, Jonathan

Goble, who lived in Yokohama, devised it with the help of a Japanese carpenter when doctor's orders prescribed 'gentle outdoor exercise' for the missionary's ailing wife. A shrewd Frenchman who saw the vehicle realized its possibilities and introduced it to China in 1847, where it appealed so greatly to the old users of the litter and the sedan chair that it became the nucleus of a whole industry. To-day the cities of China are enlivened by about four hundred thousand rickshas that steer precariously among modern automobiles. However they are doomed, and will soon become a romantic thing of the past, because the government has come to the conclusion that the trade of ricksha-pulling 'debases a man,' although this decree does not apply to the litters and sedan chairs sanctioned by tradition.

The development of the classical chariots and wagons into more comfortable vehicles, from the 'surrey with the fringe on top' to the modern automobile, was as rapid as most of the nineteenth- and twentieth-century technical changes. When we consider the thousands of years that the wheel has been in use and compare it with the history of the motor-driven car, which began at the end of the last century, we may well wonder what future type of vehicles will make use of the wheel.

While paths cleared the jungle for the travels of man, and bridges spanned the abyss and the river, human ingenuity did not stop at the waterways. Wherever the waterways of nature indicated a direction desirable to follow, man floated on them in his boats.

The simple trunk floating down a river furnished the oldest means of travelling on water. The primitive method can still be observed along the waterways in the interior of New Guinea. When the vessel of the explorer, Fintsch, approached the island the natives paddled round his ship, riding trunks and even the roots of trees in a most skilful fashion. From the floating pieces of lumber, then, the dug-out or monoxylon gradually developed. Its world-wide distribution makes it a universal type of early transportation on the waterways.

From Australia to the Pacific Islands, from the Sudan to the arctic regions of Asia and Europe, the dug-out (whose hollow part is often *burnt* out) is known to many primitive travellers of the world. It was the only boat of the South American nomads before Columbus; they ventured out to sea in their monoxylas, which were often as long as sixty feet. The Guató and the Payaguá of the Chako stake their dug-outs along the banks of rivers with long, lancet-shaped oars, different in form from the short crook-handled paddles

of the tropical forest regions. The piragua of the upper Xingú features a wooden plank or board.

In North America the Indians of the south-east coast of Alaska distinguish their dug-outs by finer workmanship and decorate them with fancy carvings. Krieger, who stresses "the fondness of the coast Indians for working in wood," which "becomes almost an obsession with them," describes their long dug-out canoes (which are hollowed from a single cedar trunk) as "constructed with a high ornamental prow and stern, shaped from separate slabs of cedar wood. Each has carved representations of mythical and realistic animal



ROOT RAFTS

New Guinea

After K. Weule

DUG-OUT CANOE

forms as totemistic and ornamental embellishments. Some of these boats were formerly fitted with sails of cedar-bark matting and are from forty to sixty feet in length. They have no rudder, but are steered with a stern paddle. Natives of Sitka, on Baranoff Island, are known to have sailed as far as Port Simpson on the Skeena, more than three hundred miles distant." These boats have a capacity of fifty passengers.

Some African dug-outs, especially of the Cameroons, are also richly decorated with carved ornaments, while those of the Sudan are more crude. The East African fishermen of Lake Tanganyika have their individual dug-outs. If the chosen tree is too tall it is chopped off; if too short, its submerged trunk is dug from the soil. When roots, branches, and bark are removed the trunk is hollowed out with an axe and with the help of the *inesso*, the common tool. Two thick, square boards are left in the trunk to serve as a foot-rest. The White Fathers who furnish this description remark that often crooked trees are worked into canoes and that some of the dug-outs look as if "they could not go straight," although they do, of course. They may serve for eight years or longer, and are trimmed with good-luck charms. A ceremony of magic inaugurates the use of a

new dug-out. It includes an appeal to the ancestors and a series of hearty epithets directed against all who should threaten the new boat by their evil intentions, be they human beings or ghosts.

The dug-outs of northern Eurasia are probably an importation and not a legacy of prehistoric times. The swamps of Finland and northern Russia, otherwise so rich in cultural remnants of the oldest periods, have not yielded a single specimen. In Estonia the

dug-out is still built by the village population and known as *Läänemaa*. Middendorf observed them on the lower currents of the Siberian rivers which empty into the Arctic Sea, and noted that they were manufactured "south of the Polar Circle from whence they are transported to the peoples of the North Lands."

Perhaps of the same age as or even older than the dug-outs are the roughly constructed bark boats. The Fuegian Yamana and their neighbours (except the Selk'nam) build them from three pieces of bark, crudely sewn together with whale barbels. They are always navigated by a woman, who holds a simple paddle in both hands while her



BALSA BOAT

Lake Titicaca, Bolivia

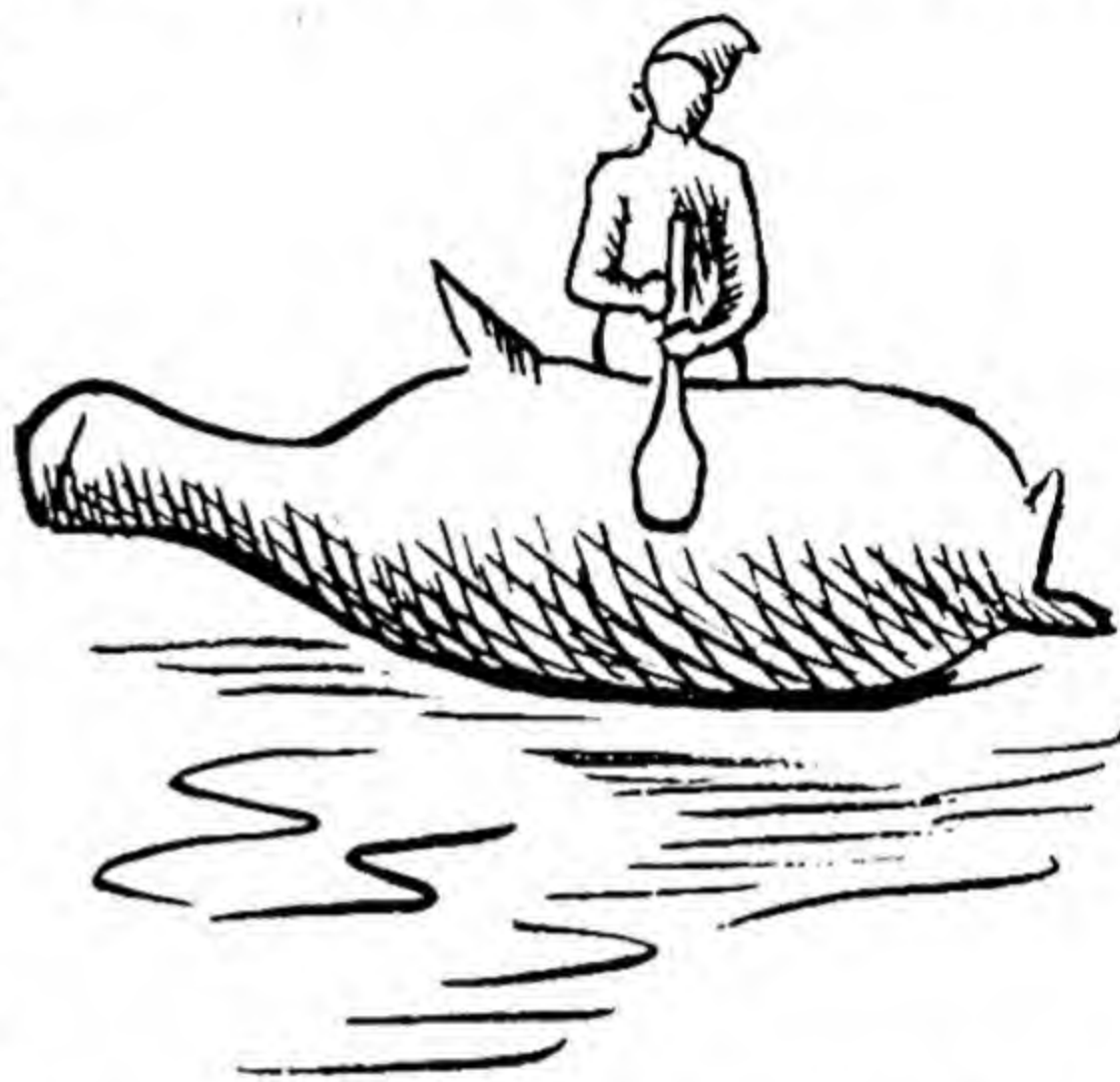
husband hovers at the bow, holding his harpoon or spear in readiness. The children are kept busy not only taking care of the fire which burns in the middle of the boat, but with the continuous bailing of water.

Some African tribes who build equally fragile bark boats, like the Negroes of Central and Eastern Sudan, use another type of ancient watercraft, the raft. These rafts are bundles of papyrus shafts tied together, or piles of ambash (*Herminiera elaphroxylon*) wood; both types are familiar sights in the Upper Nile region. Their South American equivalent is the balsa of Lake Titicaca. In India rafts appear along the Coromandel coast, and they are a favourite means of water transportation of the Californian tribes of North America. The Kamia build them fifteen feet long, composed of twelve to fourteen bundles of tule, and capable of carrying seven persons. The Tubatulabal tule rafts are only about half that

length, square on both ends, and without sides. They require two men when used for spearing fish.

A curious variety of the raft is the *corita* or pitch-cemented woven basket of the Lower Colorado which serves as a ferry. Equally strange is the huge, round clay vessel of the natives of Assam which carries its passengers safely over short distances.

Another very ancient method of water transportation employs sewn animal skins, either filled with air or fitted over a structure of bone or wood. Inflated animal skins floated along the rivers of Mesopotamia, Nubia, India, and Babylon. The bull-boat of the Prairie Indians was a round vessel of buffalo hide, stretched over a frame of elastic wood. It had the appearance of an open, turned-over umbrella. The South American *pelota* of steer hide is a comparatively recent importation, introduced by the Gauchos among the Abipones and in the Pampas.



RAFT OF INFLATED ANIMAL SKIN

Northern India

After K. Weule

The huge skin boat of northern Asia; with its sails woven from entrails and its floaters of seal hides, was, with variations, in wide use throughout prehistoric Europe. It has its late counterparts in the skin-covered vessels of the Lapps. The skin boats of the Eskimos and other present-day arctic peoples are the kayaks and umiaks. A kayak is usually occupied by a single hunter, although the natives of southern Alaska and of the Aleutian Islands devise two- or three-seated models. A frame of driftwood holds the structure together. This is covered over with sewn sealskins, with only one narrow, round opening for the occupant, who is protected from water by clothing made of skins. A fixed tray and some bands to hold his harpoon and harpoon-line in place, besides a paddle of one or two blades, are about the only equipment the hunter can take along in this extremely light and navigable craft. The umiak is an open boat, also consisting of a large wooden frame and covered with skin. It is younger than the kayak, and probably originated in north-eastern Asia. In Greenland the umiak is merely used for transport, not for the hunt, and is known as the 'women's boat.'

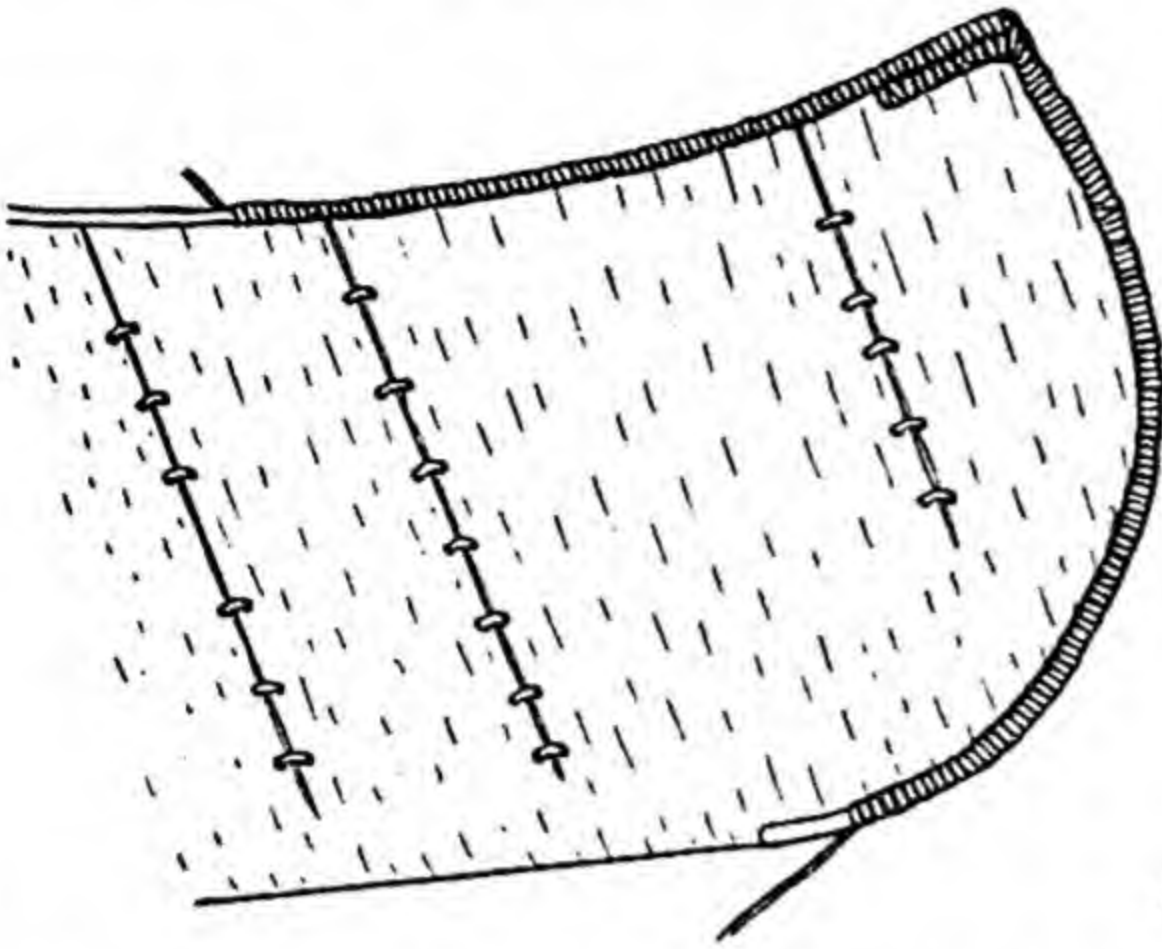
A very efficient water-craft is the birch-bark canoe of the sub-arctic hunters and related tribes (not to be confused with the rattling bark vessels of the Fuegians, to which it is far superior). The Indians tailor it from one piece of the bark of the Canadian canoe or 'paper' birch (*Betula papyrifera*). 'Tailored' is an appropriate description, because only a very skilful and experienced cutter is able to fashion such a craft without the aid of metal tools or the white man's iron nails.

After a suitable tree has been chosen two deep circular incisions near its crown and roots are made with the beaver-tooth axe, followed by a straight vertical cut and the careful peeling off of the bark. While the man is busy with this work his wife collects long strands of spruce root from the ground. After removing the black bark she splits the white roots into long, flexible strips which are boiled and left in water in order to retain the flexibility necessary for their use as 'sewing thread.' As soon as all materials have been assembled the canoe builder prepares the 'bed,' or building place, of the canoe. The ground on this spot must be firm, solid, yet slightly sandy. The bark, its weather side facing the soil, is laid on this 'bed,' then is bent upward over a bottom frame of cedar-wood. Another frame of two long, curved sticks encloses the bark from the outside.

As soon as the inner frame has been firmly set a load of heavy stones is heaped inside to stretch and weigh down the bark. The overlapping parts are cut away, and the 'tailoring' is finished. The next phase of the work, the sewing together of the tailored parts, is women's work. Holes are drilled with caribou bones at regularly spaced intervals in the bark, and are run through with stitches of spruce root. When all parts are thus sewn together with neat, identical stitches the gunwale is built into the body of the canoe, which is still, at this point, filled with stones. The shape of the vessel is now secured, and the stones may be safely removed. The next step is gluing the seams with a mixture of boiled spruce resin. The women now withdraw. The men take over again, and fit the entire inner body of the canoe with ingeniously cut ribs of cedarwood, both crosswise and lengthwise, which give the canoe its final and typical shape of a round-bottomed, smartly symmetrical boat.

This canoe, together with the toboggan, is about the most important possession of any Indian family. Many families possess three or more of them to move from the big lakes of the summer camps to the wilderness of the hunting grounds where the all-important furs are sought. The canoe carries them back in the

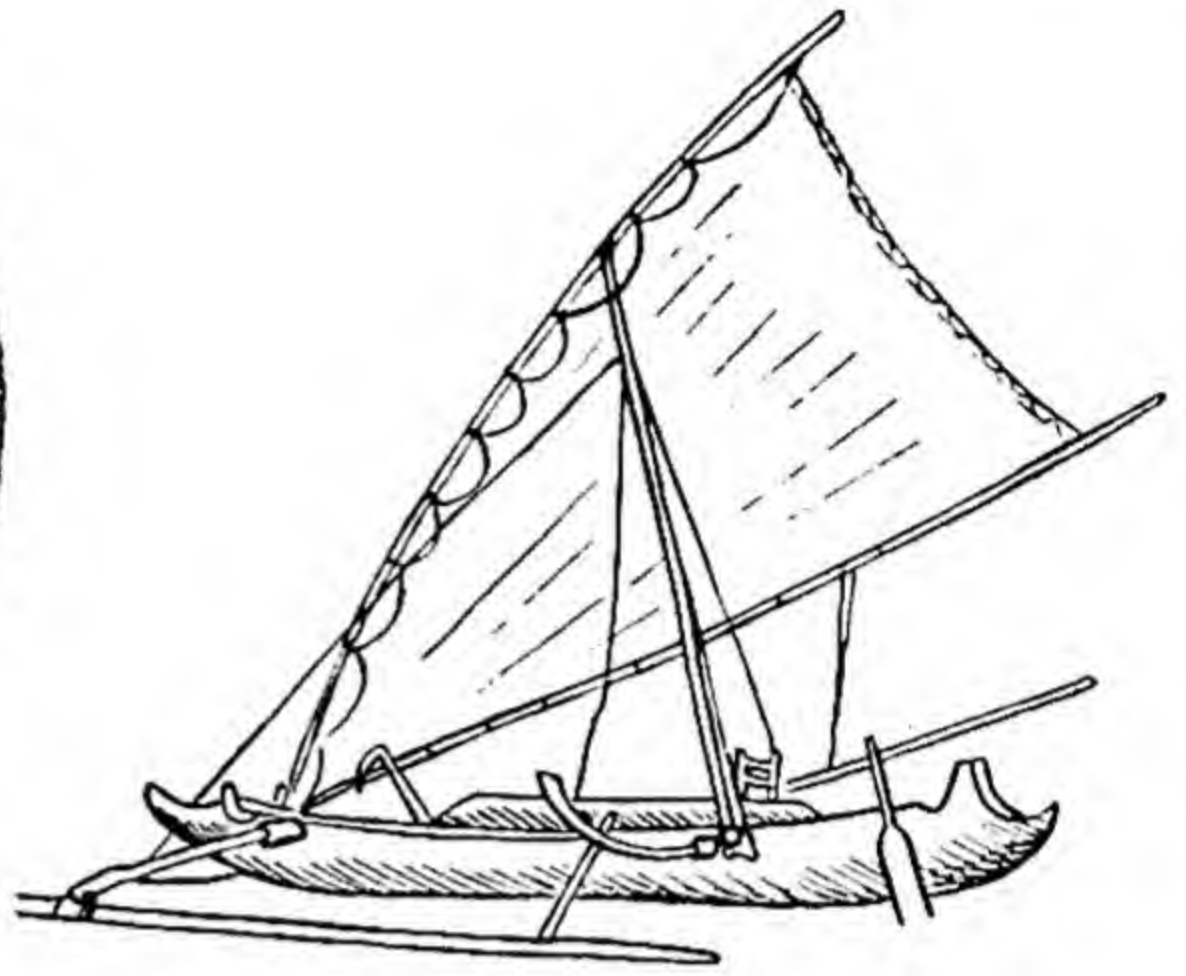
spring on the narrow streams, the 'streets' of the wild woods of the interior of Labrador.



BOW OF 'TAILORED' BIRCH-BARK
CANOE

Montagnais-Naskapi Indians
Labrador

Collection Julius E. Lips

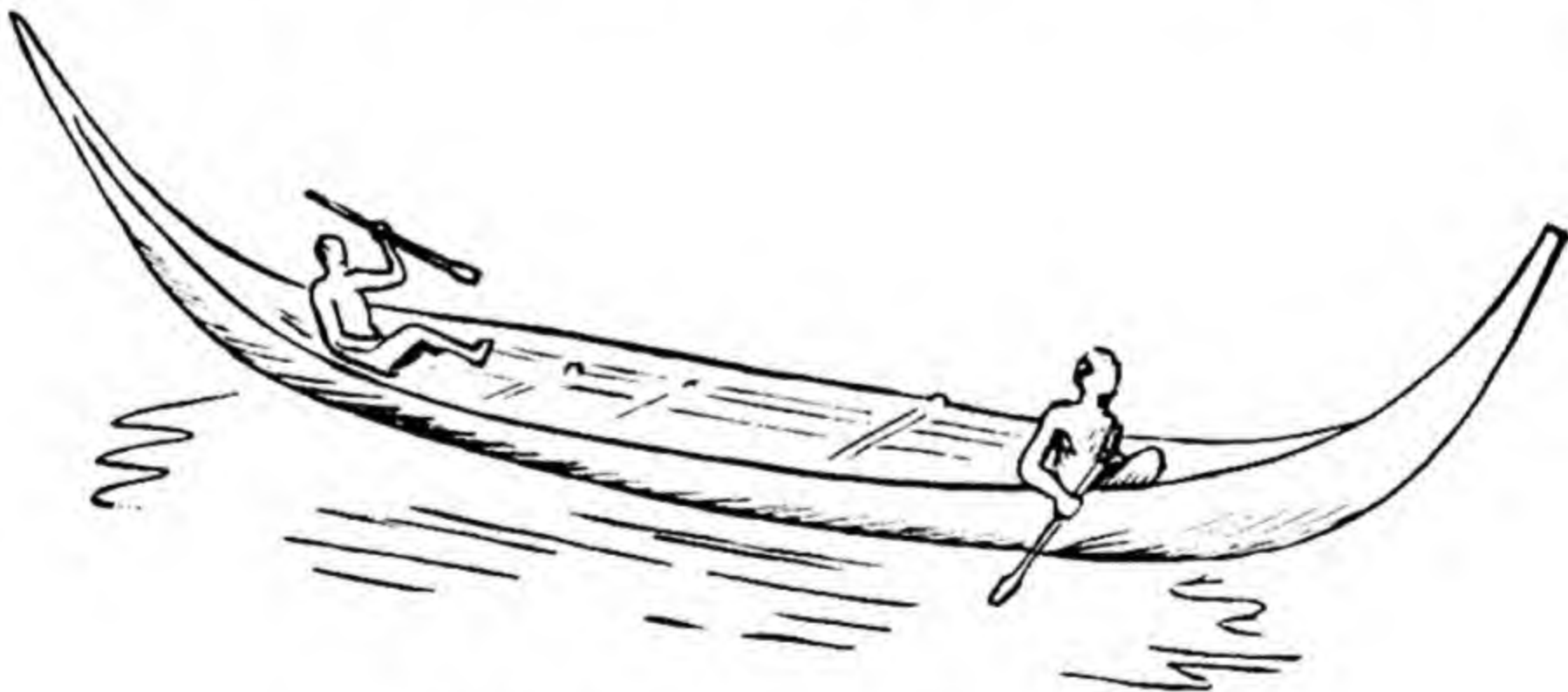


OUTRIGGER CANOE WITH SAIL

Madura Strait, Indonesia

After Pritchett

Only one who has seen the artistry, the care, and perfect workmanship applied in the manufacture of these vessels can imagine



'MON' BOAT WITHOUT OUTRIGGER

Solomon Islands

After Hambruch

the beauty of such a boat. The slowly paddled birch-bark canoes on the immense lakes of Canada are a proud sight.

About the most famous vessels built by primitive man are the canoes of the South Seas with their special feature, the single or double outrigger. They represent the highest technical achievement reached in primitive boat-building.

Although the *mon* canoes of the Solomon Islands are without outriggers, the characteristic models of the other islands generally possess the outrigger defined by Haddon as "a balancing apparatus that extends transversely across the hull of the canoe." In the great



PADDLE

Solomon
Islands

Museum of
Ethnology,
Cologne

travelling boats of Polynesia the second outrigger is often replaced by a second canoe attached to the first—a form which had its origin in Indonesia. The smaller, 'second' boats often carry completely furnished little huts in which coconuts, fishing tools, water in calabashes, and hearths with burning fires are kept for the comfort of the travellers. The larger boats are equipped with sails of mats woven from pandanus leaves—swallow-tailed in shape in South-east New Guinea and the Santa Cruz Islands, triangular in Micronesia and Polynesia, square or elliptic in Melanesia, the last type sometimes being attached to single or double masts. Large stones or stone-filled baskets serve as anchors; rudders hang in a sling on the stern.

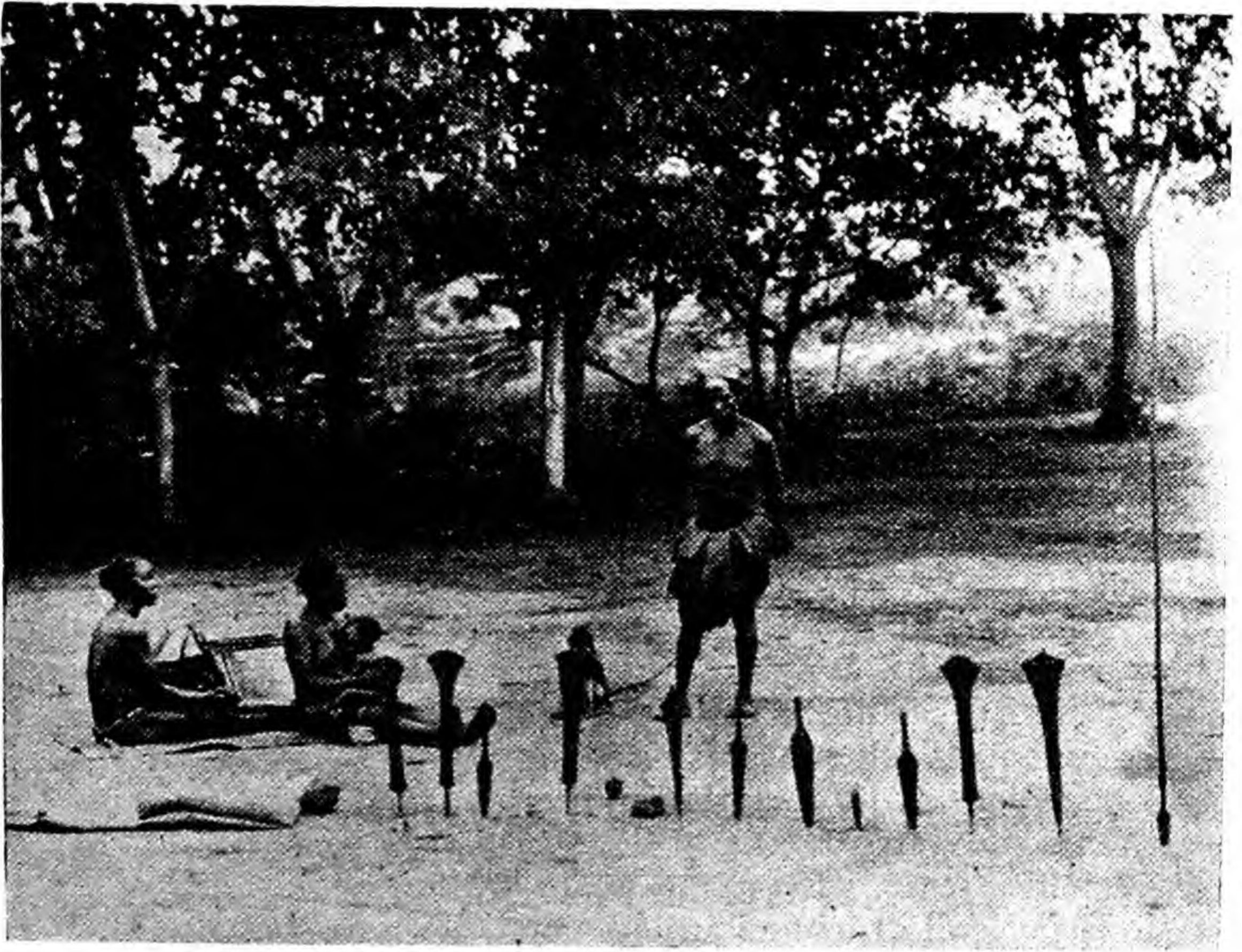
The natives of these islands have developed a considerable skill at navigation, and have regular nautical maps which they use to determine the direction of their travels. Thoroughly familiar with the currents and tides and, especially, with the location of the stars, they steer safely through the sea. Regular navigation schools exist on the Caroline Islands of Mogemog, Uleai, Poluat, and on Jaluit and Arno of the Marshalls. The Polar Star marks the north, the Southern Cross the south, and the east-west direction is determined by a multitude of other known and named stars, as Hambruch has shown in his studies on South Sea navigation.

On land and sea primitive man has thus found ways to travel and to move about, making free use of all the facilities provided by nature. We consider ourselves masters of the roads and of the rivers and oceans when we board our twentieth-century giants of transportation, but we must also consider that, unlike the man in the wilderness who builds and directs his vehicles, we are not individually masters of the ability to transport ourselves and our possessions.

Only since the beginnings of the air age have the ancient roads of land and water lost their significance to any considerable degree. Flying through the skies, we have found the miraculous magic carpet about which the travellers of the jungle could only dream.

CHAPTER EIGHT
Wall Street in the Jungle

IN TIMES OF FINANCIAL CRISES, whether runaway inflation or deflation, we tend to lose faith in that magic medium known as money. At such times we harassed victims of civilization occasionally like to think about some remote, exotic island with its



CONGO MONEY, LINED UP DURING TRADE NEGOTIATIONS
American Museum of Natural History, New York

idyllic and simpler form of society as the ideal haven of economic security, unaware of the fact that the unsophisticated children of nature have worries not unlike our own. Fundamentally the difference between a dollar bill and, for instance, a cowrie shell is merely one of appearance. The man on Broadway who pays a bill by cheque is doing neither more nor less than an Indian of the Hupa tribe who fumbles in his leather pouch and produces the head

of a red woodpecker in payment. The shape of coins may be different all over the world, but the worries that go with them are the same.

The most widely distributed money of primitive peoples comes



RED WOODPECKER'S HEAD
'COIN' AND ELK-HORN
'PURSE'

Hupa Indians

Museum of Ethnology, Berlin

from snails and shells. The thick-edged porcelain shell of the cowrie snail has been used as a medium of exchange for centuries in the remote regions of the globe. The snails are caught by the simple device of throwing cocoa leaves into the water and collecting them after the mollusca have settled on them. Merchants of all nationalities deal in this primitive coin—a trade which extends to China, Japan, and the East Indies. Its main places of origin are the Maldivian Islands, south-west of India proper, and the East African island of Mafia. The thirteenth-century traveller, Marco Polo, noted the use of cowrie coins in the Chinese province of Toloman. "These were

porcelain snails," he wrote, "such as were formerly used on dog collars."

In time, the high cultures chose other mediums of exchange. China replaced its cowries with silver and copper; Tibet with silver. In Africa, however, the use of the cowrie-shell money is still common, its value increasing with the distance of the tribal land from the coast. In the interior everything is paid for in cowrie. Even the white missionaries collect contributions in it. Among the Buboka, an axe costs one hundred and fifty cowries, a piece of Indian cotton has a value of six hundred cowries, and to buy two cakes of European soap or a package of dried grasshoppers you need one hundred cowries. The price of a bride among the Bassari is fifteen thousand cowrie shells plus one cow—an expensive luxury for any prospective bridegroom. A fetish, artistically modelled from clay, brings three hundred cowries, the equivalent of about five cents. Relics and grave-stones, taxes and fines, are all paid for in cowries, and one can become bankrupt in terms of cowrie as easily as in dollars or pounds.



COWRIE SHELLS

Another snail, *Dentalium edulis*, was used by the old Indians between Alaska and Puget Sound. It was dug by the women from the banks of the Vancouver River and valued on account of its brilliant white colour and its symmetrical shape, resembling a miniature elephant's tusk. The South Sea Islanders hardly ever deal in cowrie or dentalium. Not satisfied with mere shells produced by nature, they fashion the shells into 'money,' which, threaded on strings, is handled with all the respect due to the authorized product of their 'mints.'

By far the most prominent Melanesian currency is the famous *nassa* money, also known as *diwarra*, or *tambu*. It needs special craftsmanship for its preparation. Its manufacture is a privilege of chieftains; no woman may take part in it. *Diwarra* is made from a half-inch sea snail with a camel's-hump-shaped shell, known to zoologists as *Nassa camelus*. The natives along the coast of Nakanai, where the shell is found, collect the precious snails with nets from the bottom of the sea and store them in their huts, regardless of the offensive odour caused by the decay of the animal matter.

As soon as the south-western monsoon season is over many expeditions in outrigger boats set out from the Gazelle Peninsula, from the Bay of Talili, and from neighbouring islands, to catch the *palatambu*, as the natives call the unprepared shell. This entire enterprise is accompanied by ceremonial splendour, because *diwarra*, or *tambu*, is caught and prepared with religious devotion. The first wish welcoming a new-born boy is: "May you become a great and strong man, so that you may travel to Nakanai many times to get plenty of *tambu*." This trip takes about a month.

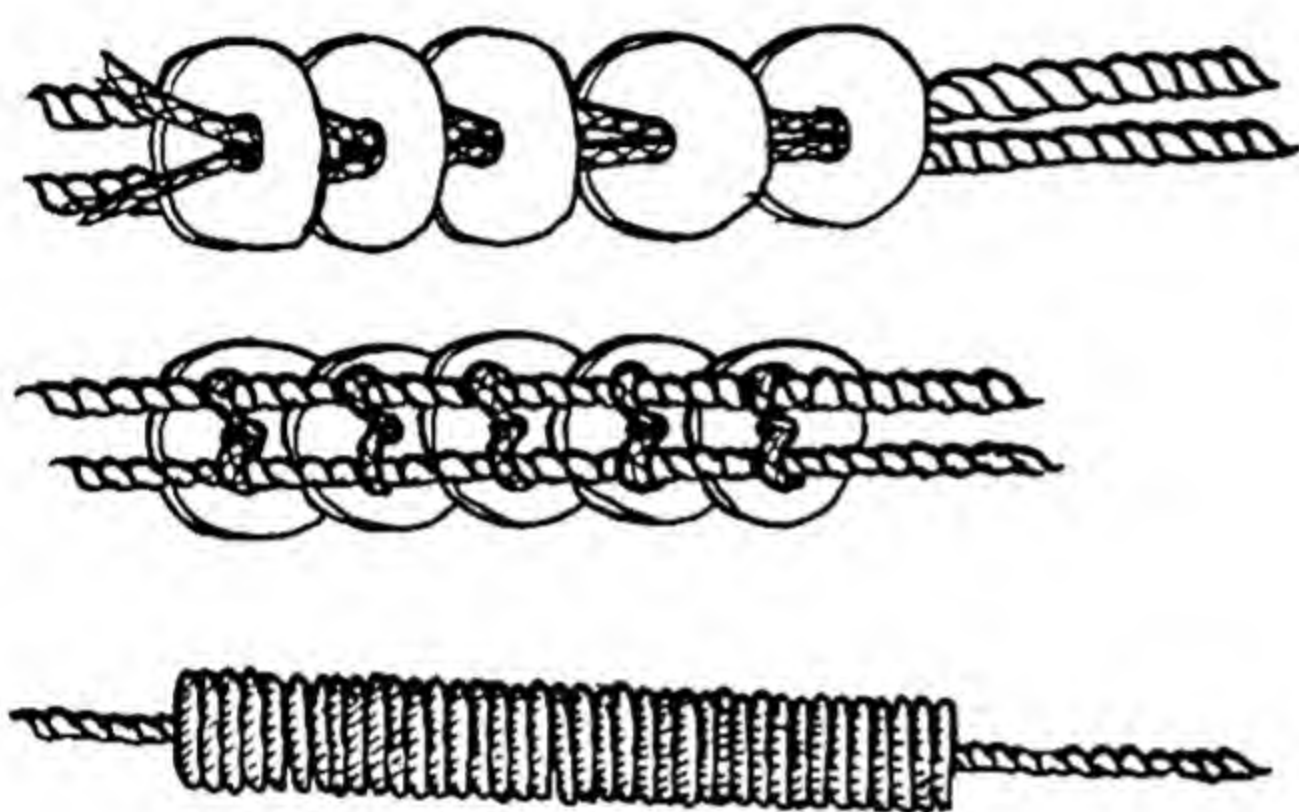
For all natives of this region *tambu* is their most cherished property, more valuable than life and health. *Tambu* is 'great and holy,' as its name indicates. Its possession even buys immortality, because only the wealthy after death go to Nakanai, the holy *tambu* land.

To cut the *tambu* out of the raw shell the natives press it into the hole of a coconut and cut off its 'camel's hump,' with the sharp edge of a shell tool. After the hole has been punched the shell is thoroughly cleaned. To give it the desired white appearance, it is submitted to an intricate bleaching process. Finally the *tambu* is strung, first on strips of bark to remove the last yellow hues discolouring some of the shells, and later on liana tendrils.

No one would dream of keeping more 'cash' in his hut than absolutely necessary. The rest of an individual's fortune is kept in the People's Bank or community *tambu* house, hidden in the

- bush and protected by constant watch. The money strings are tied together in rings often as large as a wagon wheel, wrapped in pandanus leaves, and bound all round with rotang cord. One such ring may contain five hundred fathoms of *diwarra*. It has the appearance of a heavy tyre.

Not unlike the money-worshippers of the civilized world who

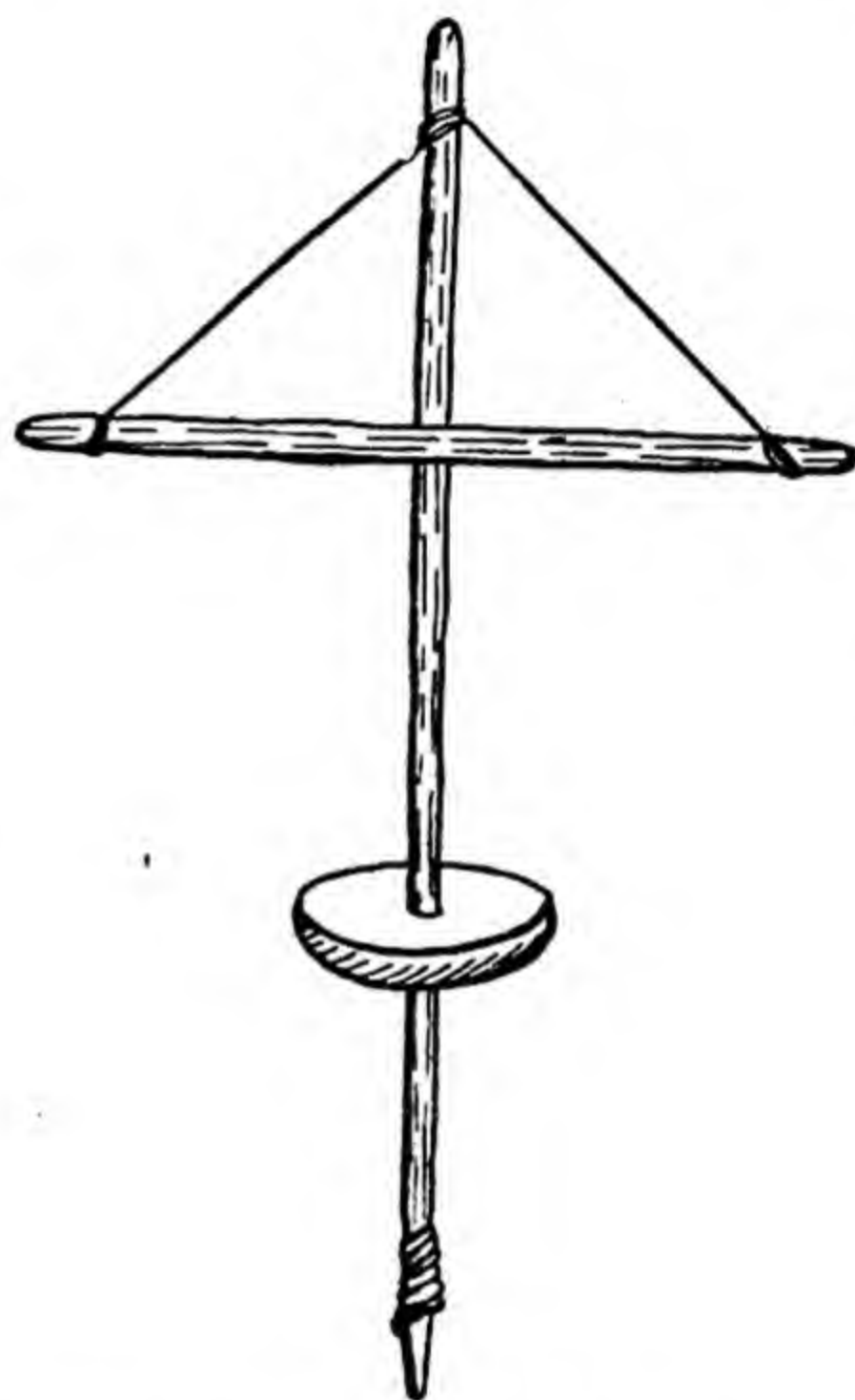


SHELL MONEY

'Bakiau' and 'Sapisapi'
South-east New Guinea



TAMBU (DIWARRA) SHELL MONEY
Gazelle Peninsula



DRILL FOR THE MANU-
FACTURE OF SHELL DISKS
New Guinea

After H. Petri

love to count and re-count their bank balances, the natives sit in their huts, measuring their *tambu* strings and experiencing all the genuine joys of wealth before they entrust their fortune to the bank.

So important is the rôle *diwarra* plays among these islanders that there is hardly any function of their daily lives in which it is not needed. Everything can be bought or sold in *diwarra*—even children, whose price is about equal to that of a bride: ten to fifty strings. Wives are constantly urged to work to enable their husbands to cash in as much *diwarra* as possible, thereby increasing the husband's power and influence.

In times of war the precious *tambu* strings are buried. The great tycoon who owns the largest amount of money strings is called

a *luluai* or *patuan*, meaning 'chieftain' or 'big boss.' Those who have but little *tambu* are *luweans*, or 'poor devils.'

Even immaterial values can be measured in *diwarra*. There is no wrong which cannot be repaired by a *diwarra* payment. For adultery, three to five strings are sufficient; murder requires about fifty strings; theft, twenty. Even the greatest, almost irreparable crime—the theft of *diwarra*—can be atoned for with a set payment. Secret societies occasionally misuse the religious conceptions of the natives for the sake of the beloved *diwarra*, mulcting some naïve soul of it under the guise of mystical representations. In time of war the chieftain who wishes to engage the service of allies has to pay generously in *diwarra*. This emphasis on money is unequalled in the civilized world.

Another type of shell money is obtained by making thousands of individual shell disks which are tied together and strung, often to a length of many yards. The Indians of California used this kind of money to purchase brides or to pay for adoptions, funerals, games, and even peace agreements. Like the South Sea Islanders, the Indians measure all such strings by measurements of the human body, from finger-tip to elbow, from papilla to papilla, from shoulder to shoulder, etc. The American wampum was made of disks from white and purple quahaug shells. Woven into belts, it also served as a legal document for the conclusion of treaties.

In contrast to the 'holy' *diwarra* money, shell disks are manufactured mainly by women. Not the material, but the artificially 'coined' shape give these disks their monetary value. Famous 'mints' are located on the Solomon Islands, on islands of the Bougainville Straits, on the Banks Islands, and elsewhere. Many tribes of the Gazelle Peninsula, where such strings are termed *pele*, trade them for *nassa* shells. Along the Buin Coast of Bougainville ten to twenty fathoms of shell-disk money buy, according to Thurdwald, a pig or a widow; murder costs one hundred to one hundred and twenty fathoms; and a young girl may have a value of up to a hundred and fifty fathoms.

The disks may be white, black, purple, or red, the latter especially on Ponape. Great shells are broken into smaller sections which are pressed into a wooden board and polished with a stone on both sides. After their perforation with a primitive drill the disks are strung on hibiscus fibres, and their rims are carefully filed down with pumice stone to make them of standard circumferences.

On Truk and Mortlock the tiny disks are occasionally fashioned from fruit shells. The Mariana Islanders make money strings of thin tortoise-shell disks.

That shell-disk money belongs to the oldest mediums of exchange is evidenced by findings in prehistoric graves in which whole 'fortunes,' buried with the deceased, have been discovered.



SECTION OF 'PIG-MONEY' STRING

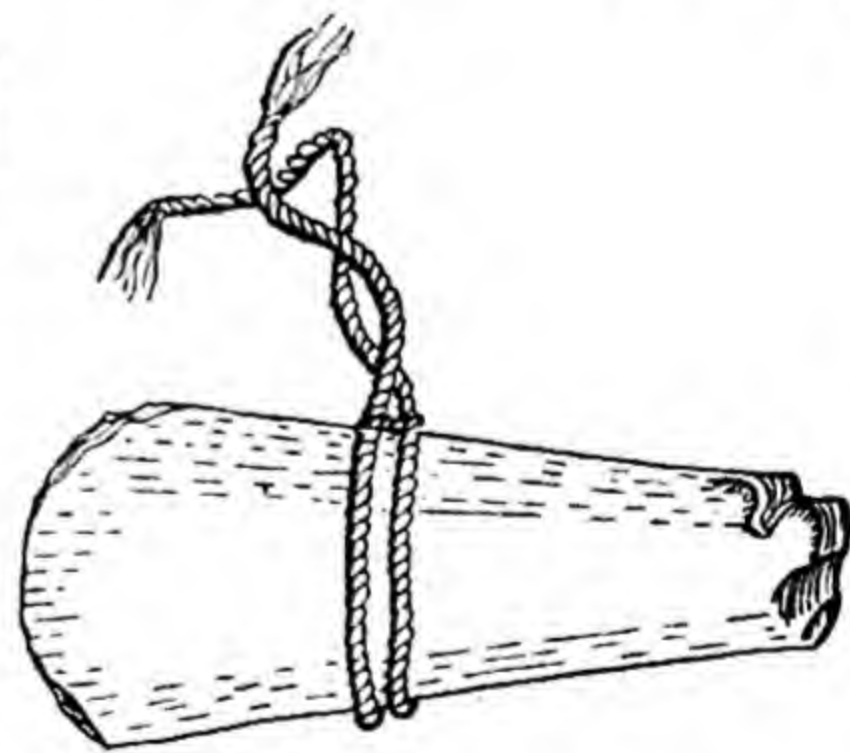
New Ireland

Museum of
Ethnology, Cologne

A combination of shell disks and other objects regarded as valuable by the natives is the so-called 'pig-money,' frequently used on New Ireland. It consists of up to twenty thousand individual disks, strung together with glass beads, woven intermediate pieces of rotang strips, and dog teeth. Its lower end is always decorated with one or more pigtails. This money is used for the purchase of pigs and of women, but for the latter, two strings of dog teeth have to be added.

One such piece of nearly thirteen yards' length consisted, according to Petri, of a long string of black and white shell disks with larger fruit-shell disks at regular intervals. This was followed by a woven square of orange and black dyed rotang strips, its corners trimmed with shell disks and pigtails. The rest of the money string was made up of a long section of white shell disks, two parallel strings of shell disks horizontally arranged, another string of white and orange shell disks with coconut pearls, four dog fangs, a further long string of white disks, and eight white shell strings in parallel rows. A mother-of-pearl shell and three pigtails dangled from its lower end.

Other varieties of shell money are the valuable arm rings, fashioned in Micronesia mainly from the *Conus millepunctatus* shell and in Melanesia from *Tridacna gigas*. Petri describes their purchasing value as twenty *tridacna* rings for a hut or a canoe. The natives of Tumleo buy a quantity of sago or a large yellow bird of paradise with one ring; two such rings pay for a watch-dog, ten for a pig. The most valuable specimens are the yellow-spotted shell rings. They are cut from the large shells with a saw-like tool which consists of a wooden bow strung with a piece of bast. On the western and central Caroline Islands,



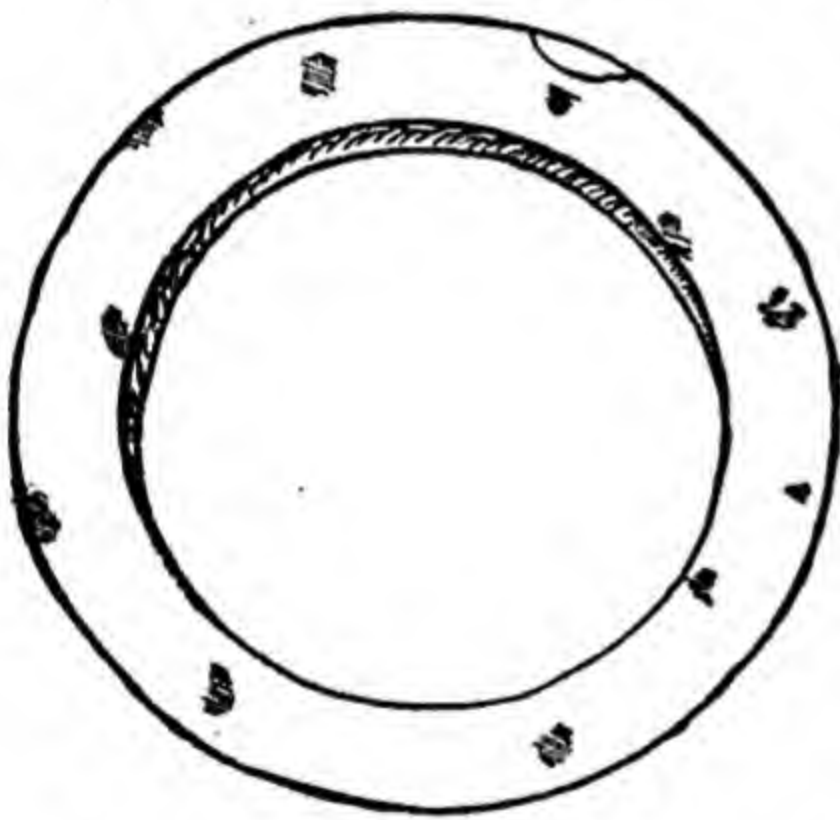
MOTHER-OF-PEARL
MONEY JAR
Island Yap
After K. Weule

especially on Ponape, these rings are fashioned from the conus shell. Similar pieces were used in prehistoric times.

Mother-of-pearl shells are another widespread 'coin,' especially in the Caroline Islands, where they are known by the name of *jar*. They are cut in the shape of a spade, punched, and tied to a cocoa string. On the island of Yap only women are allowed to use *jar* as currency. Consequently the natives term it 'women's money.' The men of Yap deal in a completely different 'coin' which belongs to another type of currency—stone money.

The famous coins of Yap, called *fei*, are gigantic wheels of aragonite, a sort of limestone found on the islands of Pelew.

To collect these stones the men of Yap have to make a trip of several hundred miles. Just as in the case of the *diwarra*, this type of currency does not serve as money in the territory where it is found, but is used by tribes living far away. With great difficulty the aragonite is cut from the rock without the help of any metal tools, and transported to Yap on rafts towed by canoes.



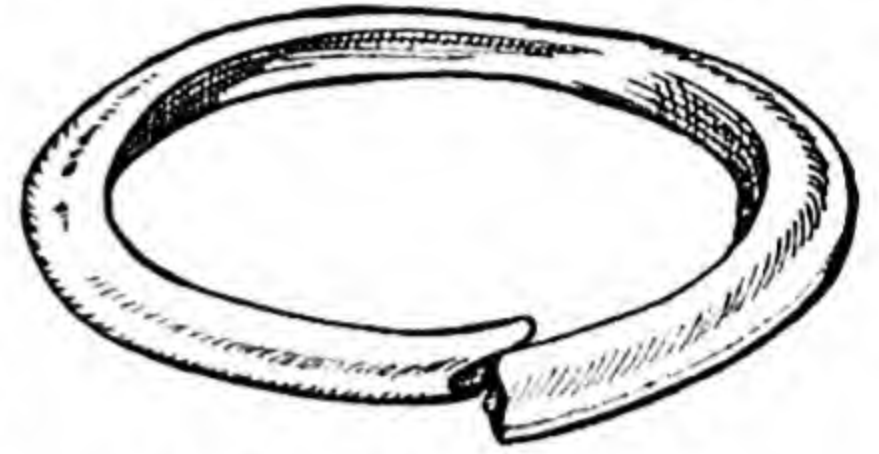
MONEY RING OF THE
YELLOW-SPOTTED
TRIDACNA GIGAS SHELL

Solomon Islands

After H. Petri

This money is of enormous size, round and flat, with a drilled hole in the middle, somewhat like a millstone only much thinner. Its value increases in proportion to its size and its thinness. *Fei* may be up to five yards in diameter, and probably constitutes the largest coin in the world. Its value is measured by the spread of the hand. In the year 1900 a *fei* measuring three spans in diameter bought a bag of copra or about ten dollars' worth of merchandise. A large-sized *fei* is worth a woman, a canoe, a pig, and a great variety and quantity of fruit.

Naturally, the unusual size of this currency causes considerable difficulties in everyday trading. For this reason the *fei* money is lined up in front of a man's home. Selling goods to another man living far away, the merchant merely inspects the appearance and position of his customer's *fei*. He does not take actual possession of each stone wheel, and may own *feis* spread all over the island.



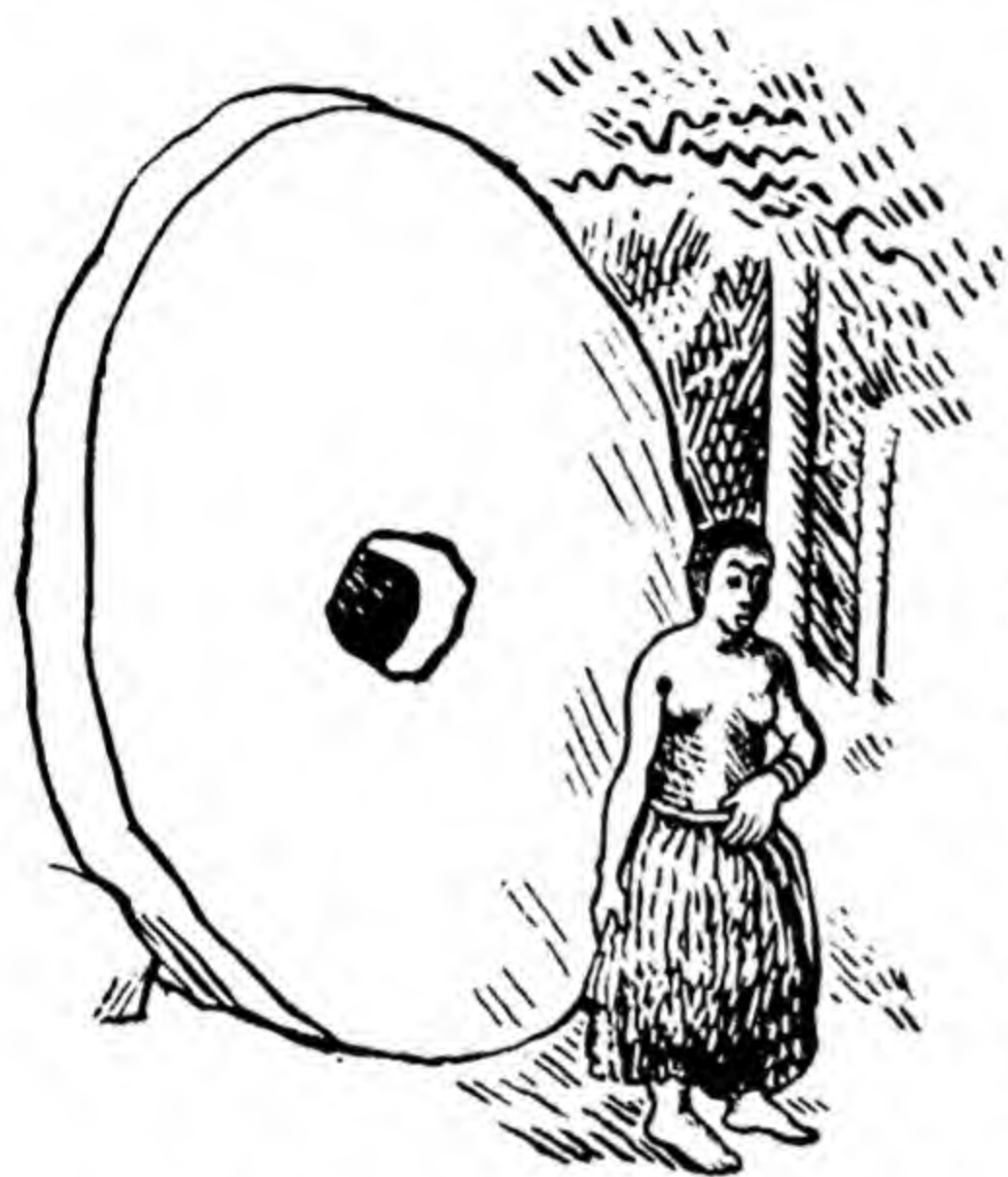
BOAR'S FANG MONEY

New Guinea

After K. Weule

When a native of Yap has to pay taxes or fines the white administrators simply mark some of his *feis* with the initials of the district officer. If the coin happens to change hands again the initials are erased. Neolithic findings in China and Indo-China show that this currency is also of very ancient origin.

Marble rings are used as money on the island of Isabel and on the New Hebrides. Native head-hunters value them as the equivalent of one human head, a 'very good' pig, or a medium-sized young man. In the southern



'FEI' MONEY STONE
Island Yap

regions of New Guinea the blades of ceremonial hatchets fashioned from volcanic stone are a recognized currency. From the 'mint' on Murua they are traded westward to the Papua Gulf. Pigs, food, canoes, and land are paid for with this money, and they are the witch doctor's fee for successful 'magical' services.

The most valuable stone currency in white men's eyes is, of course, such 'coins' as consist of precious or semi-precious stones. On account of their scarcity, such stones pass more often as valuables than as everyday currency, although they are used as money in many places.

In ancient China the jadeite was used as a coin. To-day the natives of Borneo use agate as money. So do the natives of Uchichi, who add jasper to their currency. The Caribbeans bought slaves with nephrite; and in Kordofan, Darfur, and India pearls even to-day are legal coins.

In 1624 the explorer Braun spoke of 'mystical *aggri* pearls' which he encountered in the highlands of 'Ambosy' (Cameroons). The natives called them *abug*, and would sell even human beings for two or three handfuls of them. According to a native legend, these *aggri* pearls were mined in the land of Bonyæ, but the mine shaft caved in. This explains their great value. Only the chieftains and their wives were allowed to possess *aggri* money.

Glass beads have been carried all over the globe by explorers and traders to buy native goods. In some places these beads are so firmly established as coinage that price fluctuations take place according to fashion trends and changes of taste. Behold the

South American Indian who invested his whole fortune in old-fashioned blue beads instead of in the modern red ones! His former fortune is just as worthless as some stock shares were during the depression of the 1930's.

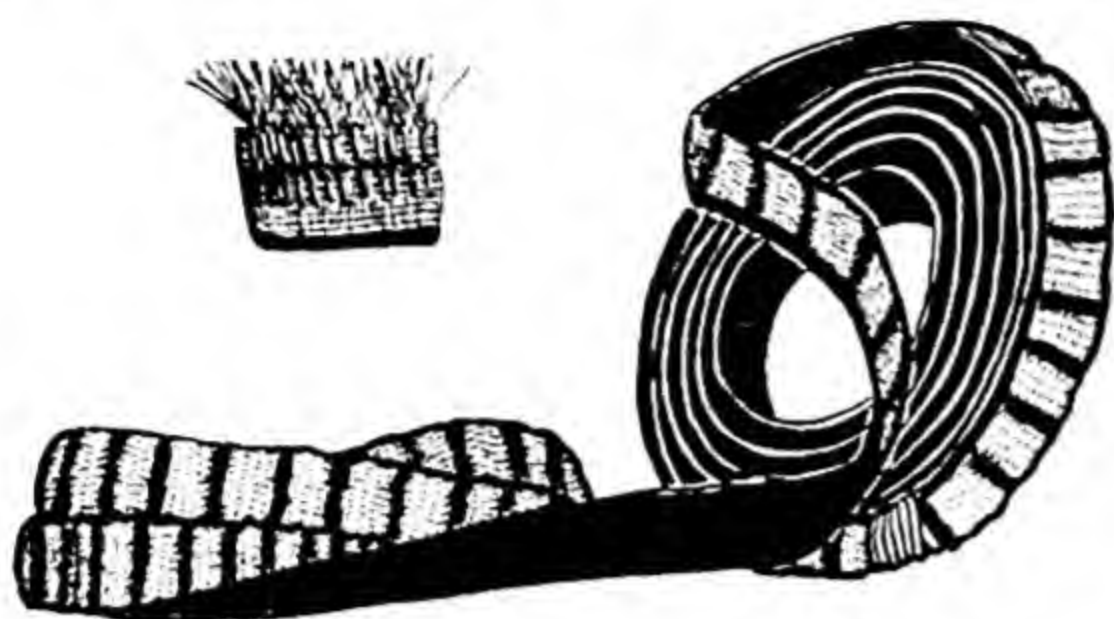
In Africa the use of beads for money is so widespread and so subject to changing trends that numerous attempts have been made to 'stabilize' certain varieties. Yet these attempts have encountered unsurpassable difficulties, in view of the continuous imports of tempting novelties. King Soona of Uganda attempted to emancipate himself from European imports by planting beads in the hope of getting a large crop, but sadly enough his attempts came to naught. Along the Croo coast glass-bead money is in circulation which, according to the natives, was mined by their ancestors in the bush and which they thought 'grew' in the soil.

On the Pelews the islanders cherish a 'holy' earth and mineral money called *audouth*. Since it is very scarce they hoard it carefully. Sixty years ago its best specimens were valued by white traders at about four thousand dollars a piece, which explains the fact that these coins are never in circulation and are seldom shown to anybody. Petri states that this money has executed "a decisive influence upon the entire tribal life" of the natives.

A more important medium of exchange is the tooth coin. It usually consists of rare animal teeth. Many of these coins are teeth artificially retarded in their growth. The tusk of the wild boar is a strange coin of this type. To attain its highest value, it must be grown in a ring-like shape. To produce this 'ideal' form, the upper tusks of young boars are pulled out. This causes the lower ones to grow with their points turning downward, and within a few years the desired circle is attained. This money is especially appreciated by the Papua, who wear the rings on their arms.

Much wider is the area of distribution of dog-tooth money, which is found not only on New Guinea, but also in the Bismarck Archipelago and on the Solomons. Only the four fangs of a dog are used for money. Arranged in three parallel strings, dog fangs pay for a pig, for food, and for pottery. A woman or a young man has a value of a hundred dog teeth. On New Guinea this money is an important means of intertribal commerce. Schmidt reports that the Nor-Papuans manufacture bracelets which they exchange for tobacco at Dallmann Harbour. They then trade these goods in Kis for dog teeth. In Vatam they buy with them the valuable red earth, which they exchange in Vaskulin for sago and pouches. These goods, in turn, are exchanged for pottery, and finally for large dog-tooth chains.

Kangaroo and opossum teeth are other 'coins' of the New Guineans, while North Bougainville and other places favour *reki*, or bat teeth, and *baiu*, the teeth of the dolphin. Dolphin teeth are also in circulation at San Cristobal and at Malanta. The Banks Islanders prefer boar money, and the Fiji and Gilbert tribes manufacture coins from the teeth of the sperm whale. A good example of the relative value of tooth money has been reported by a European explorer to whom the African tribe of the Hausa offered a ton of ivory for some cotton cloth worth less than fifty cents.



ROLL OF FEATHER MONEY
(Above) SINGLE FEATHER COIN
Santa Cruz
Museum of Ethnology, Cologne

'Zoological' money is, however, by no means limited to tooth money. Feather money is extensively used. The natives of Santa Cruz use small pieces of it, consisting of a woven band, as 'small change.' Substantial wealth is expressed by the possession of large rolls of feathers arranged in shingle-like fashion. Such a roll may contain two thousand individual feather 'shingles.' Its value is, according to Speiser, that of two big pigs or a girl.

The rolls are carefully kept in *tapa* wrappings, hung up over the fireplace to protect them against insects, and are proudly displayed to any visitor. Handed down through generations, these rolls lose their value when the red feathers they contain are worn out. Wealthy people erect their own 'bank vaults' in the bush for the safe-keeping of their treasures, and occasionally the fortune of the tribe is displayed publicly on bamboo posts. Hundreds of birds must be killed to furnish enough feathers for these rolls, hence their high value. Pigeons and humming-birds contribute their feathers to this money, as well as chickens, but in the latter case only the fine feathers that grow round their eyes are chosen. The fabrication of this money is women's work. On the Banks Islands small red feathers are tied together in bundles or woven into necklaces; sometimes white feathers are added to set off the red ones more



FEATHER-MONEY
NECKLACE
Banks Islands
*Museum of
Ethnology, Cologne*

effectively. On Santa Cruz this money is occasionally woven into belts.

In Polynesia feather money and feather jewellery have reached their greatest perfection. Cook found, in 1777, that yellow and red parrot feathers were valuable coins. Images of the gods are trimmed with feathers by these islanders, and their famous chieftains' coats, containing thousands of artfully interwoven feathers, are among the most treasured possessions of many a white man's museum.

On the Willaumez and French Islands the feathers and thigh-bones of the cassowary are used as money. The high esteem for this type of currency is due to the fact that the cassowary does not live on these islands.

North Assam knows 'skull money' derived from butchered cows, and the head-hunters of Borneo used human skulls as a medium of wealth.

Among the strangest yet most widely distributed moneys on earth is the edible 'coin.' Of course the tribes who use it make sure that such coins consist of products which are practically imperishable.

Salt is a recognized currency in most parts of Africa, often in the form of loaves or bricks of stone salt. To it the Pangwe add *kank*, a roll of boiled cassava mush. No health department stops the natives of Nias from circulating dried pork as currency. In ancient Mexico the smallest currency consisted of cocoa beans, which even to-day circulate as money in remote places. Brick tea 'money' enjoys an unusually extensive circulation in many Chinese provinces. It is made of tea-leaves, pressed into loaves the size of a brick.



STONE-SALT MONEY

Abyssinia

After K. Weule



BRICK-TEA MONEY
STAMPED WITH THE
SIGN 'MU'

Central Asia

After K. Weule

Units of rice are often used as small coin, especially on Sumatra and by the Igorot. Salaries and taxes even to-day are paid in rice in many Asiatic regions. In the East Indies tapioca coins were known. On the Nicobar Islands pairs of small nuts are currency; Tibet prefers walnuts. Other vegetal currencies are dried banana

peels and pieces of curcuma root, found on the Caroline Islands. Lapland uses even nowadays its ancient cheese money.

Stimulants also are used as currency. Nias and Eastern Siberian natives use tobacco leaves in this way. In West Africa white merchants pay with trade tobacco, one tobacco leaf being the smallest 'change.' Albert Schweitzer reports from Lambarene that one tobacco leaf pays for two pineapples and that all smaller services are paid for in tobacco leaves. Seven of them make a 'head of tobacco,' worth seven French francs. Some of Schweitzer's instructions to travellers in Africa are :

If you want to buy food, don't take money along, but tobacco. If you want to avoid robberies, sit down on the precious box during the boat trips. On the water, the pipe goes from mouth to mouth. If you want to travel comfortably, promise each hand on deck two leaves of tobacco, and you will reach your destination one or two hours earlier than anybody else who offers white man's money.

More dangerous is a currency circulating in a Chinese province of Hainan—opium. Equally dangerous is the use of brandy money along the Loango coast, where it is passed in glasses or bottles as small or larger payment. During the rainy season an egg costs half a glass of rum, while the price is raised to a full glass during the dry season. A goat costs three bottles of rum and a piece of cotton cloth. The Ainu tribesmen pay with rice brandy which they receive from Japan. This alcoholic money is very dangerous, as it is likely to tempt its owner to become intoxicated with his wealth in the truest sense of the word.

With the development of the rubber trade many primitive tribes acknowledged rubber balls as means of exchange. In Togo they occasionally replaced even the traditional cowrie coins.

Closest to the white man's conception of money are the metal currencies which are used in addition to the other varieties, particularly in Africa. Especially in places where different cultures came into contact with each other, a variety of currency has been the rule. These metal moneys do not have the shape of coins in our sense, but appear often in the form of tools and weapons.

The region of Tabora in East Africa is known to the natives as *Unyanyembe* (Land of the Hoe), so called after the one hundred and fifty thousand iron hoes (*yembe*) delivered there sixty years ago by the natives of Ussindja and used as monetary units. Spears, knives, and white man's guns have been added as currency. In 1906 the Pangwe established stabilized prices for all major objects of their

trade, but although they adopted iron-spear money as their standard currency, other coinages were equally recognized, due to the infusion of various cultural and economic elements from other forms of civilization. This makes it possible to translate native values into equivalent amounts of English money.

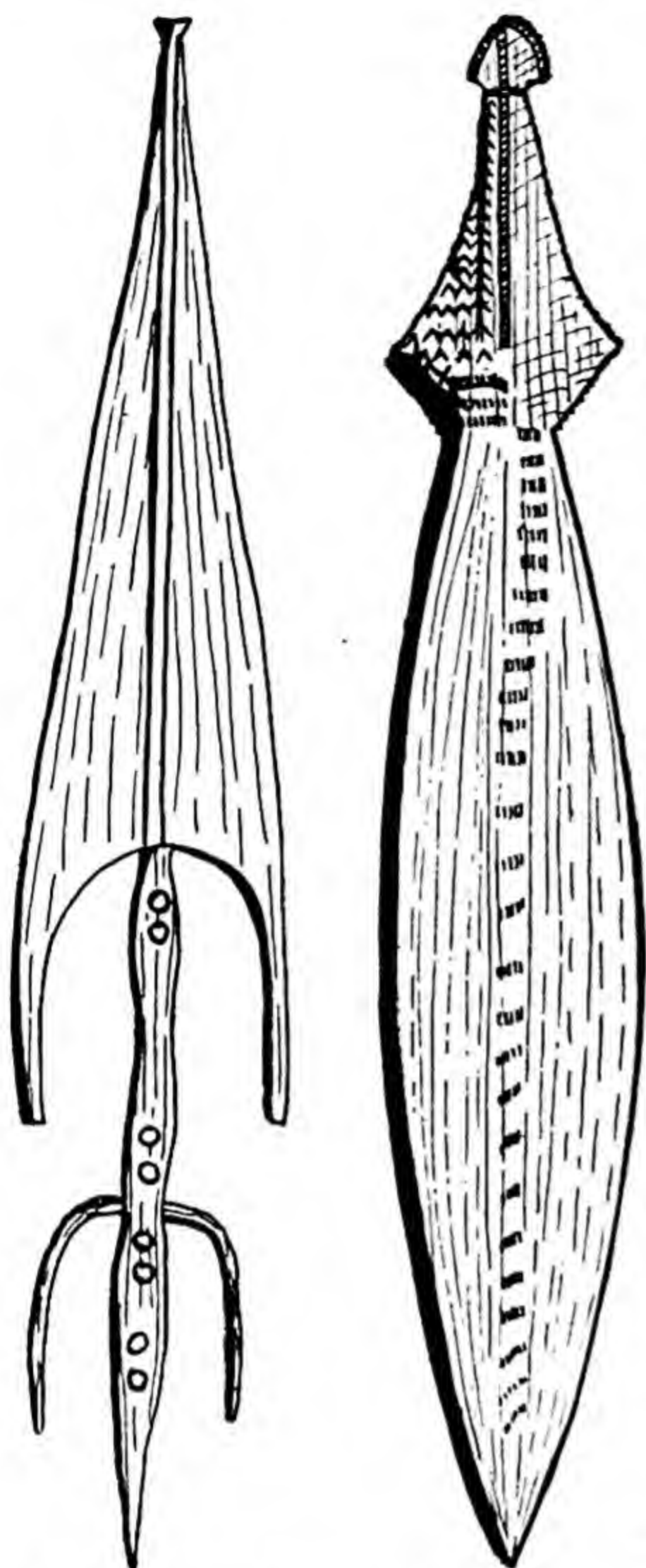
A Pangwe bridegroom in quest of marital happiness, for instance, must make the following payments for his bride :

	£	s.	d.
6000 spears	20	0	0
12 guns	6	0	0
2 barrels of powder		4	0
70 boar tusks	3	0	0
2 sheep	2	10	0
2 iron pots		10	0
10 pieces of cloth	2	0	0
5 hats		12	6
13 pots of salt	1	0	0
2 knives		2	0
2 packages of beads		2	0
2 tobacco pipes		1	0
2 packages of flint		1	0
1 hat full of buttons		1	0
Total	£36	3	6

As we can see, the price for a Pangwe bride is a considerable amount, which often condemns many young Pangwe men to life-long bachelorhood.

For their metal money the African natives never depended on imports from Europe, since the process of producing iron by melting it in furnaces was known to them long before the white man had acquired that knowledge.

The favourite shape of iron money in the form of familiar tools often leads to their reproduction in miniature. The old iron money of the Pangwe, for instance, has the form of diminutive axes, tied together with fibre strings in fan-like fashion. Ten such bundles are worth about a quarter of a dollar. This money, however, is now scarce. Present-day Pangwe currency is made from spear-points whose value depends on size and workmanship. An ordinary iron spear is worth about two cents. Unusually large spears are worth about twenty-five cents. They are particularly used for the purchase of women. An elephant tusk costs about two hundred spears ; a rhinoceros bird, ten spears ; a large rat, ten spears ; a pipe, only one spear ; a soup ladle, two spears ; a European gun,



IRON MONEY

Northern
Congo

COPPER

COIN

Congo

Museum of Ethnology, Cologne

Dark Continent via the Near East and the Sudan, penetrating all North Africa and Western Arabia, even passing the Equator. This taler became tremendously popular with the natives, who adore the portly bust-line of the Austrian Empress whose image adorns one side of the coin. Slenderness as a mark of beauty is unknown to the natives of Africa.

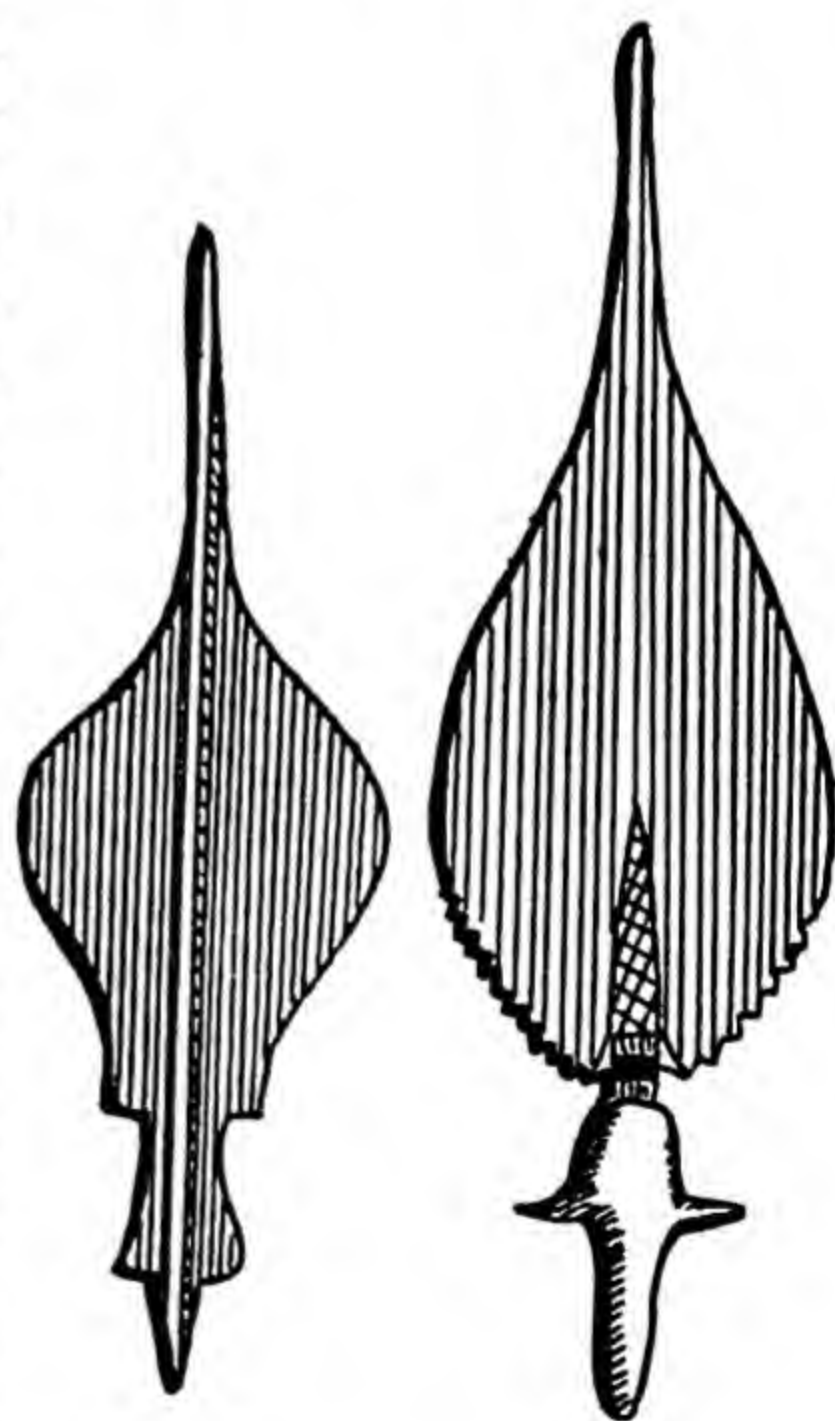
Other foreign coins which have con-

one hundred to two hundred spears; and the moustache of a leopard, ten spears.

The East African Usandaui also use spear money, while the tribes of the Western Bantu prefer axes and spear-points, and the Basongo, throwing knives. The African Pygmies barter with neighbouring tribes for iron-knife and spear-point money. They use the so-called 'silent bartering,' a procedure in which both the prospective buyer and the seller deposit their wares at an appointed spot without ever meeting each other in person.

A curious money circulates along the upper Binus. It consists of nails and pins. In contrast, the Pomo Indians of California preferred neatly polished cones of dolomite or magnesite.

One particular European coin has become very popular with the natives of Africa. It is the 'Maria Theresa taler,' an ancient three-mark piece which entered the



SPEAR-POINT MONEY

Fang, West Africa

After G. Tessmann

quered primitive regions are the Mexican silver dollar, a recognized currency all over the Far East, and the Indian rupee, current in Tibet and East Africa. In some parts of Abyssinia cartridge shells have been accepted as currency, and peaceful commercial transactions are settled with these reminders of wars gone by.

Copper bars in the shape of St Andrew's crosses were a valuable Congo currency. Heavy semicircles of copper are money at Stanley Pool. Beautifully ornamented, such half rings are known in many parts of West Africa. These manillas, as they were called, were a recognized currency, especially in the kingdom of Benin, as their frequent appearance on the famed bronze plates of the sixteenth and seventeenth centuries proves.

In ancient China metal money was used in many varied shapes and materials. The oldest Chinese metal currency had the form of a very thin bronze spade, with a hollow centre and a four-sided handle. Bronze

bells and other finely cast currencies were manufactured in China as early as 300 B.C. The 'sounding' coins or *K'ioo ts'ien* are famous for their half-moon shape, their excellent workmanship, and delicate ornamentation. They were known by the names of 'moon' or 'bridge' money. Even the Chinese word for money, *ts'ien*, which means 'hoe,' is a reminder of the original shape of the oldest Chinese currency.

In south-eastern Asia gongs were used as currency. They served for the purchase of wives and for the payment of fines, but were also used to build up considerable fortunes. Many tribes of western India use metal drums instead. On the island of Celebes brass rings are the native money, while the African Bantu use iron



MERCHANT WITH MONEY RING
(‘MANILLA’)

Bronze Plate of the Sixteenth
Century

Benin, West Africa

Museum of Ethnology, Stuttgart

beads ; the Basongo, copper and alloy ornaments ; and the North American Haida, ornamented copper plates. These 'coppers'

ANCIENT CHINESE BRONZE MONEY



Spade Coin



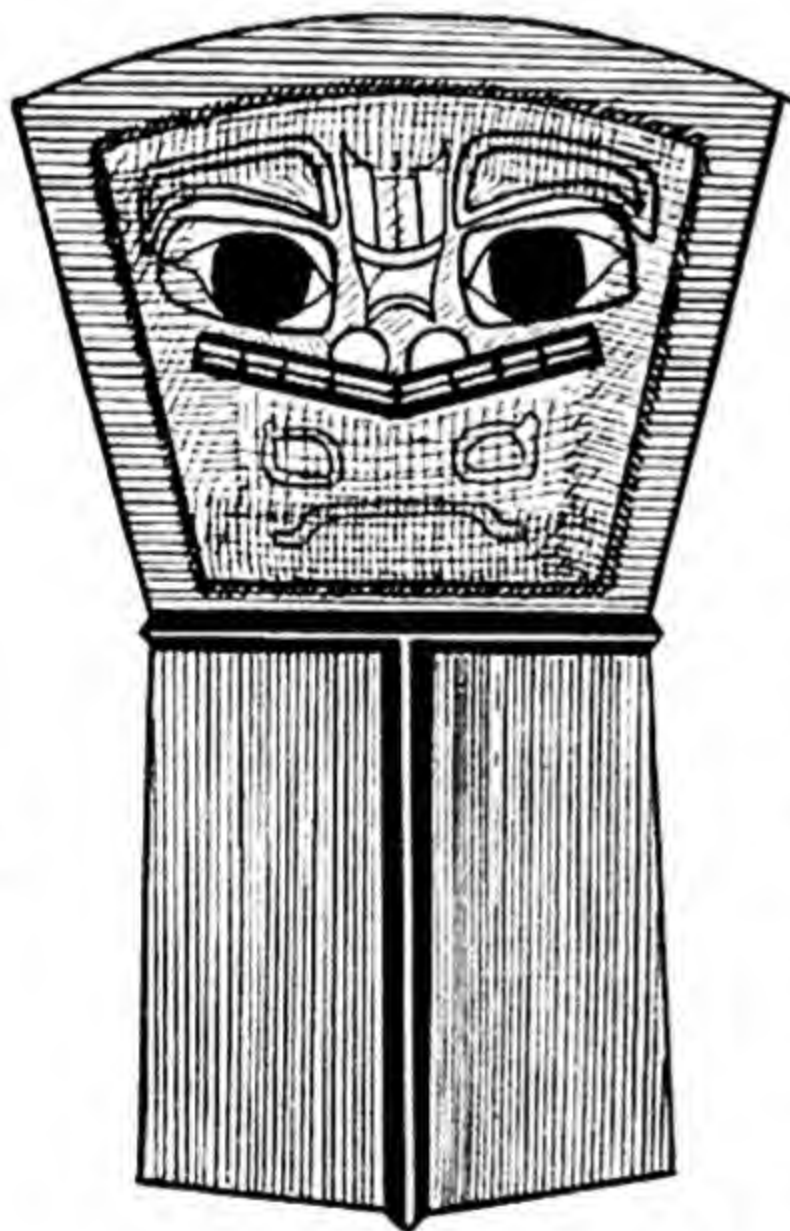
Bridge or Moon Coin,
K'io'w ts'ien

After O. Münsterberg



Bell Coins

were cherished with religious ardour, as is the *diwarra* of the South Seas.



ENGRAVED 'COPPER'
Ceremonial Haida Money
*Museum of Ethnology,
Berlin*

The king of all metals, however, has always been gold, and no country on earth has ever resisted its lure. Gold coins as we know them are nowhere manufactured by primitive tribes, although gold bars and gold-dust have been recognized by many peoples as valuable mediums of payment. But even the evaluation of gold varies. There are places on earth where silver is preferred for everyday purchases, while gold is given preference in the selling and buying of precious and beautiful objects. On the African Gold Coast and among the Ashanti, gold-dust was used as money and was weighed with the aid of the famed artistic gold weights of the Ashanti: tiny, bizarre figures of animals and tools of daily life. Gold-dust money circulated in China and in Indo-China and, above all, in that most alluring of all gold

countries, ancient Mexico.

Modern civilizations have discarded gold bars as means of ex-

change between seller and buyer, and have coined them into pieces instead. This, at least, was so until nations were forced to abandon their gold standards altogether. But wherever a genuine gold coin shows up, be it in our modern cities or in the desert of Africa, eager eyes recognize its value.

To those who wonder what has happened to the former American and European gold coins the author is able to report that he personally discovered one of their caches in an oasis of the Western Sahara, where little dancing girls of the Ouled Nail tribe perform their tricks for the pleasure-seeking nomads of the desert. In their tiny houses, built of dried mud, these girls strum their guitars, and whenever they raise their arms, the wide sleeves of silk glide back to expose scores of bracelets made of the gold coins of all civilized nations, coins collected from their friends and customers.

Just as civilized nations authorize the state alone to manufacture money in its mints, most primitive tribes allow only one man or one selected group of men or women to manufacture their currency. For this rôle, many tribes in Africa choose their blacksmith, which helps to explain why he is the most respected member of the tribe, ranking immediately after royalty. At Korintji on Sumatra the privilege of coining copper and brass-ring money is vested in two men especially appointed for the purpose. They have the honorary titles of *Pagawei Djanang* and *Pagawei Radja*, distinctions which they pass on to their sons by inheritance.

'Paper money' as an addition to coin money is as well known to many primitive tribes as it is common in our form of civilization. While modern coined money has its origin in primitive iron tools and raw metal bars, paper money can be traced back to cloth money and to the mats and hides which circulate as mediums of exchange among many races. Fine hand-woven mats are money on Samoa and in south-east Melanesia. The Yap variety is cruder. It is rolled together and tied to cylinders with fibre strings.

The north-west American Indians traded with blankets, which represented a considerable purchasing power. In Siberia the natives paid their taxes in hides; many North American Indians used beaver-skins for money; and the southern tribes traded in raccoon hides. Other skins were used in north-western America, the Tlinkits using moose hides. Wherever this kind of money is in use, cloth money of many varied kinds may also be found to serve the same purpose.

The whole tradition-sanctioned trading ceremony annually performed by the Indians of Labrador, who bring their winter fur harvest to the white traders of the Hudson's Bay Company in order

to buy supplies for the coming winter, can be regarded as an example of the use of 'hide money.' Until recently, the valuable fur bundles of these Indians were estimated in terms of 'made beaver' (M.Br.), a remnant from the times of the 'beaver coin' issued by the Company for their Indian trade and representing the value of one prime beaver-skin.

In the Sudan and in Upper Guinea cotton money is in constant circulation. Tibet favours the *chadak*, a silk material used exclusively for making payments. In ancient Japan poets were paid with cloth; the same custom is known to all readers of the tales of *The Arabian Nights*. As in the case of the glass beads, this money also is often subject to threatening ups and downs caused by changing fashion fads—as, for instance, in northern Senegambia, where the Moors recognize as money only a distinct type of navy-blue Indian cotton cloth which they are able to distinguish from any imitation by its smell.

Another development in the direction of the invention of paper money is the official stamping of money mats by white administrators, as is done by the Portuguese in Angola, who then recognize such stamped mats as legal currency and accept them for payment of taxes.

From this fibre money it is but a small step to the 'real' paper money which is the Western World's most common medium of payment. As far back as the thirteenth century Marco Polo reported the use of paper money by the Great Khan. It consisted of the fibres of the mulberry-tree.

All this paper is manufactured with great lavishness and publicity, as if it were melted silver and pure gold—because on each piece the body of officials, especially appointed for this purpose, not only sign their names, but also affix their seals. When this has been done in regular order the highest mint master whom His Majesty commissions for this purpose dips the seal entrusted to him in vermilion and stamps therewith the piece of paper. In that manner it receives full sanction as a valid coin, and should any one imitate it he would be punished as a major criminal.

Odd coins shaped from leather were used in China during the Han period, but they gave place to the so-called 'token' money. Token money is similar to the chips used by gamblers to represent money as long as the game is on. China had, and still has to-day, such token moneys of clay, porcelain, or lacquer. During modern Chinese funerals 'the money of the deceased' is symbolically burned—the ghosts who demand this are successfully fooled by scraps of paper replacing genuine bills. In South America

European bus companies used to issue tickets made of gutta-percha which the natives accepted and treated as money.

Almost every ancient type of currency is surrounded by countless myths that tie it up with the gods, the dead ancestors, and the spirits and ghosts living in all objects of nature. These beliefs tend to increase the value of money and stop robbers and forgers. The 'civilized' criminal who holds up a bank is threatened merely with imprisonment; the primitive robber of money, however, is doomed and exposed to the wrath of the gods, a punishment of eternity which makes this type of crime almost non-existent among most tribes.

The natives of the Papao Islands, like many other primitives, consider their currency of heavenly origin, created by mystical birds and fishes and hidden by them along the beaches of mysterious islands. When this money changes hands a surtax is added so as to appease 'the feelings of the coin.'

In Mecca, the centre of Islam, most women carry a cherished holy charm made of ancient Venetian gold coins showing the image of Christ and of San Marco. In Tibet, Indian rupee coins are used in the same way, but their religious value is due to a pious error, for the image of Queen Victoria is taken for the head of the Dalai Lama.

The copper plates of the American north-west coast were individually named. They were kept in their 'own house' and even received daily food. Women were strictly forbidden to enter such a house. The 'coppers' themselves supposedly came from the man in the moon as a present for his fellow-tribesmen; others believed that they were brought by a mighty chieftain whose magic castle was in the sea.

This religious veneration of money differs considerably from our own cult of the god Mammon, for it reaches much deeper into the soul of primitive men than the modern desire to grasp as great an amount as possible of the indispensable dollar.

All over the world there are careful savers as well as spendthrifts. Just as in our own case, the Melanesian Islander is at liberty either to squander his riches or to deposit them carefully in his savings bank, built in the centre of the village for the safekeeping of money with an official watching the precious shell strings. People part with their *diwarra* with the same feeling of reluctance and regret that we have when we part with our shillings. The effect is the same all over the world, whether the Salaga customer keeps twenty thousand cowries in his fibre purse as small change, or the Pangwe carries his iron money in string bags on his arms, or the Abyssinian

takes his cartridge shells from a European cartridge bag. And it is as easy to lose in gambling when, among the African Bassaris, the cowrie falls wrong side up, as it is in Monte Carlo when the croupier's rake pulls in one's stake.

Even the dead in their graves are not safe from their creditors. The relatives of a deceased Ewe tribesman cover his body with cowries so that all rightful creditors may collect their share. Taxes are a nuisance everywhere, no matter whether they are paid in dollars or in shell money, in mats or in edibles. In Bornu every male citizen has to pay one thousand shells for taxes, each pack ox is taxed with an additional thousand shells as 'sales tax,' and for each slave there exists a 'luxury tax' of two thousand shells.

But each region has its own financial tycoon. The African king of Nassakama sold his land to the African Company, Ltd, for a yearly pension of three hundred thousand cowries.

Exchange speculators are the cleverest wizards of all, and many of them show their skill in primitive societies. A native of the Ashanti tribe was astute enough to trade in all his cowrie money in the year 1860 at the rate of one dollar for eighty-five strings. He waited thirty-six years, until the exchange rate had risen to two hundred and sixteen strings for one dollar, to buy himself a new fortune of cowries and become the wealthiest man of his people.

Hashash, an iron coin, was officially introduced in Kordofan in 1820. In the Sulu Archipelago the sultan stabilized the exchange rate of certain cotton pieces used as currency, and the rate was determined in such a way that it never changed again, regardless of increasing or diminishing imports.

When an inflation threatens a primitive tribe, caused by a change of fashion or by excessive imports of new values, a wise financial policy is the only means of saving the investors' property—just as in our civilization. This happened, for instance, in the year 1840, when Shah Omar of Bornu decreed that the Maria Theresa taler and the Spanish dollar would henceforth be legal tender and that cowrie shells should become the official small change—thus eliminating all inflationary tendencies of other mediums of exchange.

But deflation can also threaten the economic stability of a people. An interesting example occurred during the Second World War, and has been reported by official Netherlands sources in the Dutch East Indies :

To the Indonesians of this remote outpost gold and silver have no value, the accepted money long having been beautiful coloured sea-shells formerly brought from long distances over dangerously

precipitous mountain trails. As the shells are fragile the money supply naturally must be renewed from time to time.

However, the shores where these particular shells can be found were in Japanese hands. As a result, deflation threatened the district with disruption of the entire economic system because of the acute shortage of 'money.'

Finally, in despair, Dutch officials administering the district delegated an officer to Australia in an effort to solve the problem. The Netherlands East Indies Commission then sent men to comb the Australian beaches, but without success. Then one day an official joyfully burst into the offices of the Commission, shouting: "No more deflation. I've found money."

He led the astonished Dutch officials to Melbourne's leading department store, where the shiny shells were sold as toys for Australian children. The Netherlands administrator returned to his district bearing bag after bag of the shiny shells, restoring happiness and prosperity to the people.

Only a very few tribes on earth do not depend to some extent on money to cover the necessities of their existence. Among them are the Australian hunters and food gatherers, who know neither poverty nor fortune. But as soon as the economic form of a society assumes more involved and complicated aspects the conception of money enters the people's lives. It is merely a matter of chance and locality whether such money consists of shells, stones, hides, or metals. The pains of poverty and the power of wealth remain the same to all who have discovered the secrets of selling and buying.

CHAPTER NINE

From Tom-tom to Newspaper

EXPLORERS, ENTERING REGIONS no white man's foot has ever touched before, are amazed to find that the natives of the deserts, the prairies, and the jungles often receive them without surprise and in some cases even have quarters and food ready for the members of the expedition. Questions about how these people learnt of the approaching visitors are answered with a vague and evasive: "We were told," or, simply, "We knew." How does primitive man in the deepest wilderness without modern systems of communication obtain this information?

Many a sheep farmer in Australia has been mystified by the sudden disappearance of his loyal native workers who, after a few days of absence, return to work as though nothing had happened, furnishing after long hesitancy the explanation: "We were summoned home by our tribe under penalty of death if we should not follow the call." What call? How were they notified in the barren wilderness of the Australian bush?

Civilized man, venturing into the wilderness, must reckon with the fact that a perfect system of wireless telegraphy has been invented and perfected by primitive men. Their ancient methods of disseminating news are foolproof; short circuits, static disturbances, magnetic storms, or strikes never impair their efficiency. The struggle for life is merciless in the wide-open spaces, and the speed with which the news is received and passed on may save or doom human lives. The white man can scarcely hope to learn all secrets of the native codes, but, taking notice of their intricate and perfect nature, he cannot help but admire the brains that originated them.

The simplest medium of communication is, of course, language. It leads to the development of other acoustic methods of news communication. In contrast to these acoustic methods initiated by language, there are optical means of broadcasting news which furnish in their development the link to the beginnings of script. Radio and newspaper—the approach through the ear and by the eye—are our own two principles used for disseminating news. Even though their means of expression have been magnificently perfected to-day, these same two principles have served the same purpose since the dawn of time. Among primitive methods, we find that acoustics — language and sound — is used by societies

whose domains are comparatively small, while the application of optical devices is mainly found among tribes occupying the great open spaces.

The small communities of agricultural peoples, whose largest political unit is the village, have developed systems of communication mainly based on the principles of sound, or acoustics. The herdsmen and related peoples, on the other hand, whose bands are scattered over wide areas, have developed the optic system of news dissemination. Their optic systems led finally, in the old high cultures, to the invention of script, with the drawn picture as its original manifestation.

It was not until the emergence of the high culture that both principles, the acoustic and the optic, were perfected and blended into the complicated instruments of news agencies and other institutions exclusively dedicated to the current enlightenment of the public. Originally the art of writing was developed by the priests and kept secret to serve their own purposes. This, however, does not mean that all methods of news communication originally served religious aims. From the earliest times, we can detect two parallel efforts stimulating the manifold systems of news communication: a rationalistic, purposeful desire, and a religious impetus.

In principle, the difference between our modern methods of news communication and those of the primitives is not as fundamental as one might assume. Telegraph, newspaper, and radio, however wide their range of effectiveness, do not reach all members of the population immediately.

Even to-day many rural communities use means of communication which resemble those of the children of nature. Thus, in parts of our modern civilized world, when the town-crier's bell calls together the inhabitants of a village to hear a proclamation of the city council or the announcement of the next town meeting, he makes use of a system almost identical to that of the natives of New Guinea, Africa, and South America, where the village drum transmits important news to the community. What is the difference between an illiterate delivery woman of any 'civilized' backward region who marks down pieces of ordered merchandise by drawing symbols representing radishes, flour, or household gadgets, and the North American Indian who uses mnemotechnic pictorial sequences to record the traditions, songs, and victories of his tribe?

But the analogies go much further. When a knot in a handkerchief serves to remind us of an errand, when a black mourning

band around our sleeve announces a death in one's family, when a road sign tells us where to go, when a gong calls us to dinner, when in olden times a stick was broken over the convict, when St John's fire glows on the mountain-tops of Europe — what difference is there between these announcements and, for instance, the carved message sticks of the Australians, the mourning paint



GONG OF THE AVUNGURA

Belgian Congo

*American Museum of Natural
History, New York*

of the Tasmanians, the trail-marking branches of Siberian tribes, the tearing of grass leaves when the verdict is spoken by the Loango judge, and finally, the smoke-and-fire signals of the prairie tribes, the Puelche, the Australians, and the Papua? They all spell out some kind of message, and are understood by those whom they concern.

The oldest means of human communication is language, and there is no people on earth without a language. Language does not function by the spoken word alone, but may assume all forms of expression which the physical structure of the organs of speech allows. The Veddas of Ceylon and the Central African Pygmies communicate the news in a peculiar whispered sing-song. An American W.A.C. corporal,

Margaret Hastings, marooned by an aeroplane accident during the Second World War in a valley of the New Guinea mountain-side, heard "a wave of odd, continuous sound," which grew "louder and louder and closer and closer. It sounded exactly like a pack of dogs yapping." It turned out to be a signal summoning the native helpers to the spot of the accident. The New Guinea natives are very crafty with this sort of wireless; they call each other from mountain-top to mountain-top, with intermediate stations relaying the news.

Among the Negritos of Northern Luzon, five different types of news criers have been distinguished by the explorer Vanoverbergh, who describes them as :

(1) A shrill cry, at a very high pitch, long, and without variation in tone. "Where are you?" Very often used in the forest.

(2) A cry similar to the preceding, but lower in pitch. "What is the matter?" "What do you need?" Very often used in the forest in answer to (1).

(3) A cry similar to the preceding, but much shorter, and followed in one continuous emission of voice by another one, at a pitch considerably lower and very short. This means: "Come along," "All right," "Come this way," etc. Very often used in the forest, also used alternatively by people approaching a house or a meeting place.

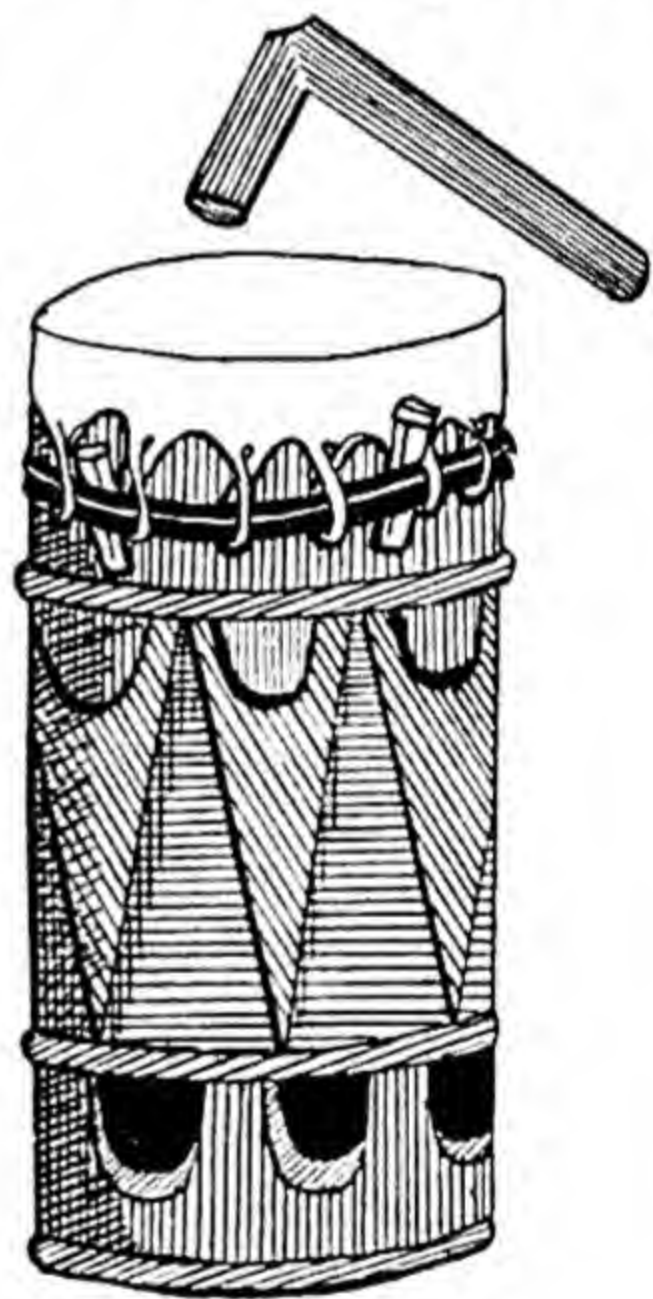
(4) A shrill cry, very long, starting at a very high pitch, and lowering gradually until extinction. This cry is emitted by all present and in chorus, when there is a peal of thunder or an extraordinary gust of wind. The fifth type is 'merely emotional.'

The Hurons and Iroquois, by long-drawn-out 'scalp-cries,' announced the number of enemies slain in battle. Swanton points out that among the Creek Indians, "whooping also formed a kind of means of communication," and he distinguishes between the "death whoop" and "the whoop of the successful warrior coming home with a scalp."

Primitive villagers of India warn their neighbours of adjoining communities of tigers threatening their live stock, as Corbett tells us :

Standing on a commanding point, maybe a big rock or the roof of a house, a man coo-ees to attract the attention of a neighbouring village, and then shouts the message across in a high-pitched voice. From village to village the message is thus broadcast in an incredibly short time. Hence it was usually possible to learn of the man-eater's attacks shortly after they occurred.

But however strategic the position of the caller, the capacity of the human voice is comparatively weak. It was, therefore, only logical to amplify its range by substituting artificial instruments to make the news audible to all who should be reached. The western Bantu invented for this purpose an intricate system of signal pipes. Flute signals are in general use in eastern Sudan



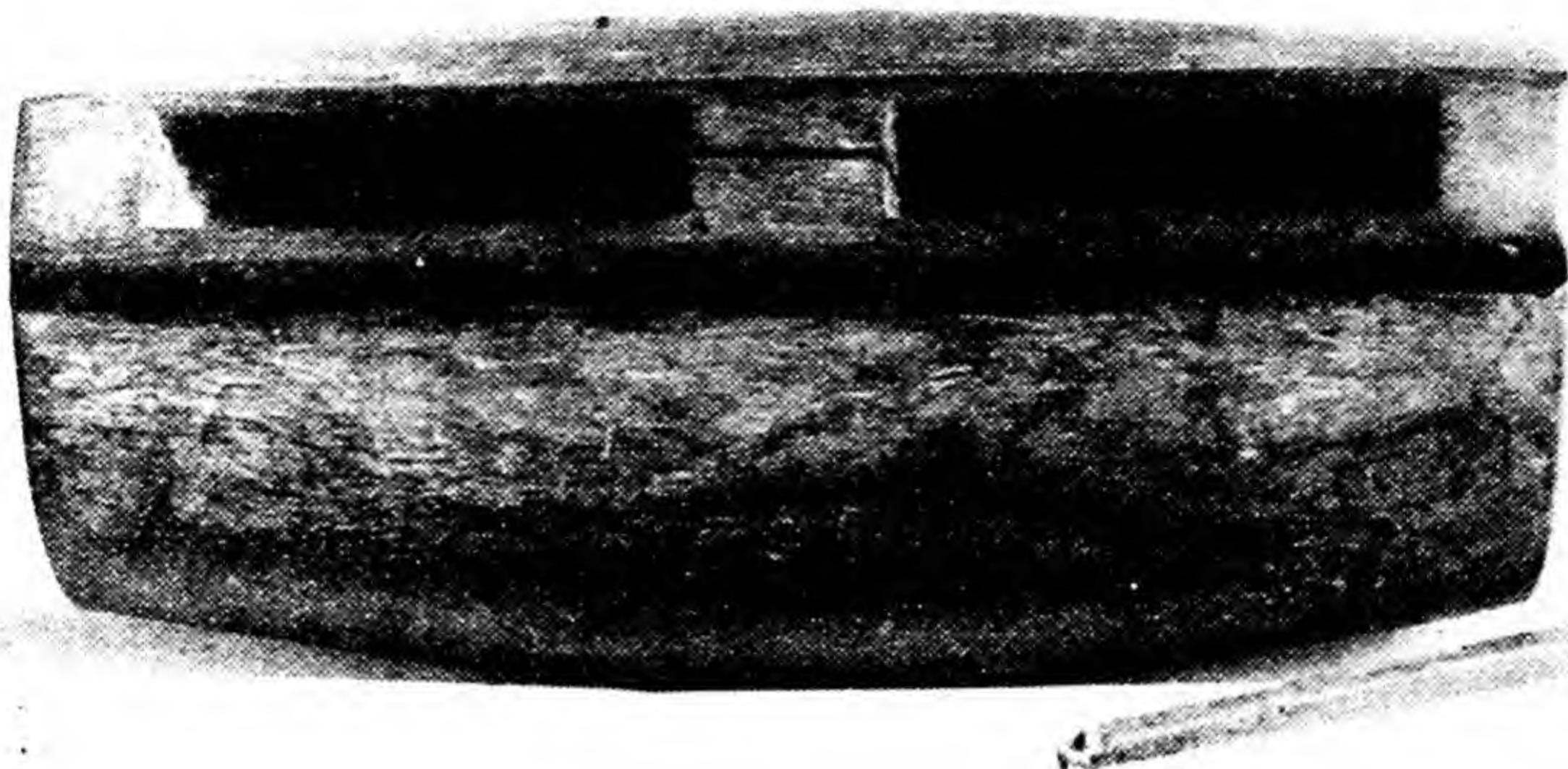
WAR DRUM

With drumstick of the marrow of the raffia palm

Pangwe, West Africa

After G. Tessmann

and in the northern Cameroons. Signal horns and shell trumpets call the population together to encourage the fighting warriors

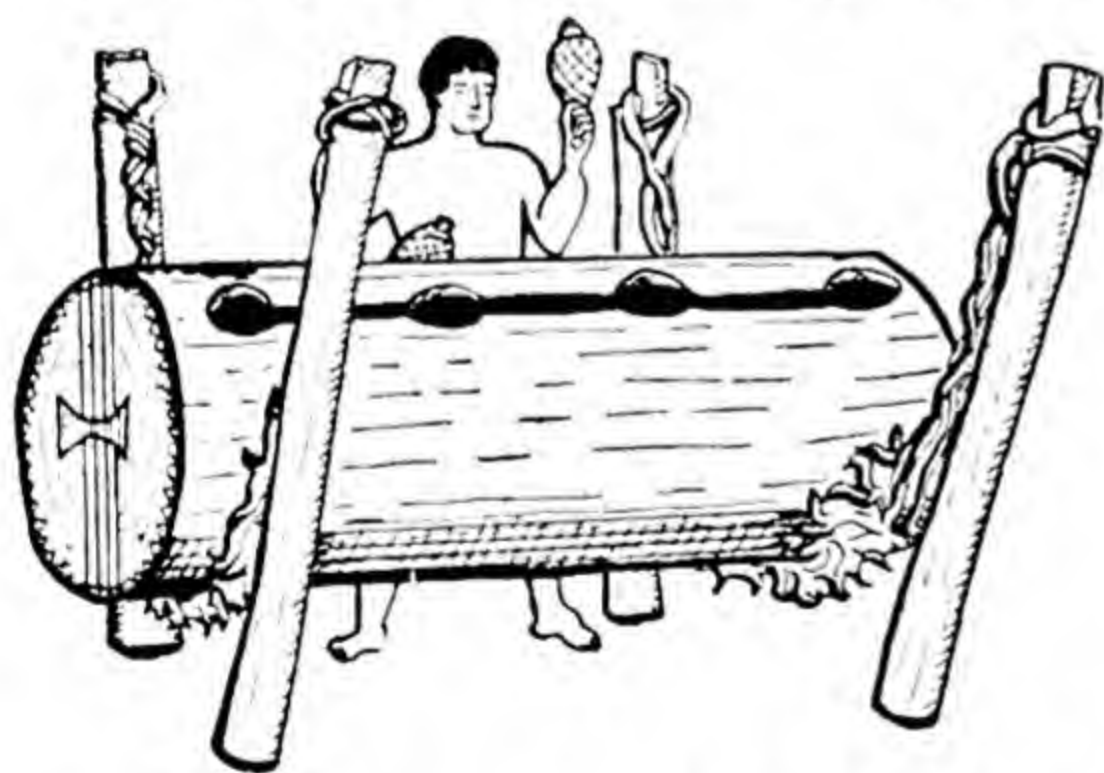


AFRICAN SLIT DRUM

Museum of Ethnology, Cologne

among the Wute of the Cameroons, the Zueva and Caribs of South America, the Admiralty and Caroline Islanders. The bugle of

our modern armies is used in a similar way.



SIGNAL DRUM OF THE TUCANO
INDIANS

South America

After Koch-Grünberg

Another signalling instrument of acoustic news communication, and the most prominent one at that, is the slit drum or signalling drum, a typical cultural element of the simpler agricultural societies of West Africa, South America, and New Guinea. It consists of a whole tree or part of a trunk, completely hollowed out but with both end segments left intact. The upper middle section has a long and

comparatively narrow slit into which one or more drumsticks are inserted to produce, in proportion to their size and width and the force applied by the drummer, a series of easily distinguishable sounds of different pitch. The resulting variety of effects

makes possible the development of complete code systems of endless possibilities.

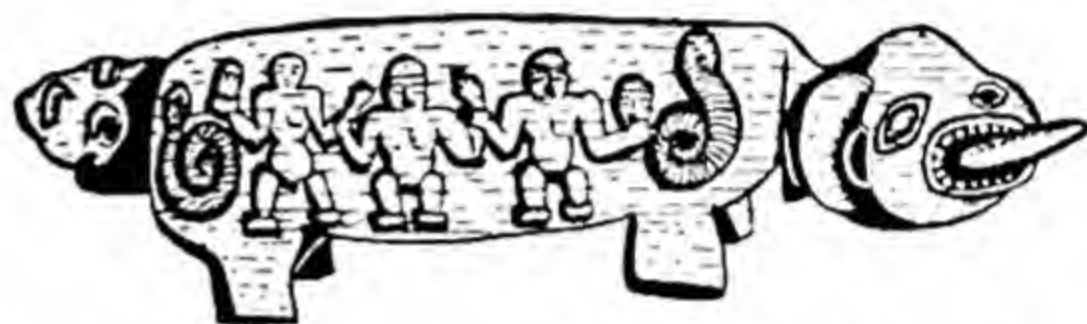
These cylindrical tom-toms may be of smaller size or even of different shape, like the box drums of some African tribes. The Banda, a Ubangi tribe of French Equatorial Africa, have two distinct types of drums. One, the *linga*, a large tree-trunk mounted on four feet, is beaten with two sticks of different size, both with hard rubber balls at their ends. This is mainly used to communicate from one village to another. The second model, the *okporo*, smaller and of conical shape, is beaten with the hand or with a light stick. Its sound mainly accompanies the funeral ceremonies of the tribe.

All kinds of messages may thus be sounded. They may be of a social or ceremonial nature, or they may announce current events like an approaching safari. When entering a village

in Nigeria, the explorer Hives-Lumley was preceded by mighty drum-calls. They said to all who had ears to hear: "Come to the market-place without fear! Come! The white man is here and wants to speak to you. No war palaver! Come!" Audible for many miles, it was repeated at frequent intervals to make sure that everybody had had a chance to spell it out. As a rule, the big drums are set up in the middle of the market-place and thus represent a kind of local cable office from which all news of general importance can be disseminated to the entire population.

Many South American Indians use similar models, often equipped with additional tongues protruding into the slit. Such tom-toms, sometimes called *teponatzli* after ancient Mexican and Central American models which were their possible prototypes, summon the community together in the Zueva settlements of Colombia, among the Cara of Ecuador, and among the Jivaro and Tukano in the Orinoco and Amazon regions. Beaten with rubber-topped sticks, they can be heard at very great distances. They announce the approach of the enemy, and call for the erection of defence structures; they summon the villagers to join in peaceful gatherings. Often they are decorated with exquisitely artistic carvings.

The natives of the Gazelle Peninsula have, like their brethren of New Guinea, worked out drum codes of great variety, and are able to express anything they want to broadcast, be it the



SIGNAL DRUM OF THE BANSSA

Cameroons, West Africa

After Max Schmidt

arrival of visitors or ships or the results of a successful pig hunt. Almost every farmhouse boasts its own drum and can communicate with the other participants of the 'party line.' The Nor-Papuans of Dallmann Harbour, New Guinea, have, besides the big *döbön* slit drum which sounds the news, smaller hand drums or *voagön* of hour-glass shape, richly carved, with lizard-skin coverings at one end. The *voagön* accompanies their dances and songs, while the *döbön* not only is employed for the 'broadcast to all' but may also be used for private communication between two individuals. An expert connoisseur of their drum language, the missionary Father Joseph Schmidt, who managed to listen in on many of their private and public drum conversations, has transcribed them very skilfully by indicating the variations of sound volume by dots of smaller or larger size. The following examples are some of the results of his eavesdropping.

If, for instance, a hungry husband comes home in the evening and finds that his wife is still out fishing on the lagoon he may call her home as the brown-skinned Saijam did, by this signal :

..... | |

The last six beats are Saijam's personal 'initials,' his individual signature.

Not only the individual caller but also the sib as a whole has its own characteristic 'alarm bell' or 'theme song' to enable the listener to distinguish immediately the identity of the sender and to know whether merely one man or the whole community speaks. The sib 'signature' is called *möröb*. If, for instance, not only Saijam's wife but all women of the community should be absent unduly long the individual husbands would not call their wives home, but the sib itself would 'speak' in one single *möröb* signal :

●●●●●●●●●● | ●●●●●●●●●● | ●●●●●●●●●● |
 ●●●●●●●●●● | ●●●●●.....

Each drum call, individual or *möröb*, has its own name. This makes it easier for the village gossips to talk about the latest news. Some old women who hear, for instance, the *gankabarët*, know immediately that at a certain household the ordered goods have been delivered, but that the boy who brought them found nobody at home. He will therefore beat the drum to spell out the *gankabarët* to the absent customer :

..... | | | | | .

Of much wider distribution than the acoustic means of communication are the optical systems. The methods of communicating by visible signs start with the possibilities provided by the human body. Just as the simplest acoustic means of communication is language, so the gesture is the simplest form of optical communication. It may be used to indicate single key words representing numbers, objects, moods, or directions ; or it may be perfected into an actual substitute for speech by adding a sequence of mimic or gestural expressions to make whole sentences for the purpose of co-ordinated conversation.

Examples of the first type are the gestured numbers of the Tikar of the Cameroons, or the word signs of the Prairie Indians who express, for instance, the term 'female' by a combing gesture, a 'tent' by an imitation of the conical shape of their homes ; 'death' by an 'adverse' gesture of both hands, the 'sun' by a circle, a 'tree' by an indication of its branches, and so forth. The second type of the use of the gesture—the creation of regular sentences by purely mimic expressions—enables its users to speak to each other in full detail without the utterance of a single sound. The ancient author, Adair, deeply impressed by the perfection of this sign language, described it very eloquently.

The present American Aborigines seem to be as skilful Pantomimi as ever were those of ancient Greece or Rome, or the modern Turkish mutes, who describe the meanest things spoken, by gesture, action, and the passions of the face. Two far-distant Indian nations, who understand not a word of each other's language, will intelligibly converse together, and contract agreements, without an interpreter, in such a surprising manner, as is hardly credible.

Thus, primitive man has solved a problem which, from the Tower of Babel up to the lengthy translations necessitated by the diverse language of members of the United Nations Council, has not been solved by civilized man. The sign language, this Esperanto of the wilderness, is or was used by many American and African tribes.

Only the very recent invention of the radio has changed the ancient belief that sight reaches farther than sound. During the preceding periods of time, optic means of communication had the advantage so far as range was concerned. For this reason, the attempt was made to develop the effectiveness and perceptibility of the human gesture by the addition of other optic signals, like smoke and fire, which could reach greater distances.

When, for instance, an Indian spotted a buffalo herd, he hurried

to an elevated spot in sight of his village, lifted a blanket with both hands over his head, and let it sink down slowly—a gesture which set the whole community in action. This ‘Morse Code’ of lifting and lowering a blanket at certain meaningful intervals was further perfected by the alternative covering of a smoking fire and its exposure which, again, made it visible at even greater distances. If no fire was at hand dust was thrown up and down for a similar effect. The Seminole Indians, “when they went hunting, divided into parties which preserved the proper distance from one another by smoke signals. They would light a fire and, as the film of smoke rose, they would stop it at intervals by throwing a blanket over it” (Swanton). Smoke and fire signals directed the battle movements of the South American Puelche and Ranqueles. The ancient Gallians used similar signals in their wars against Cæsar.

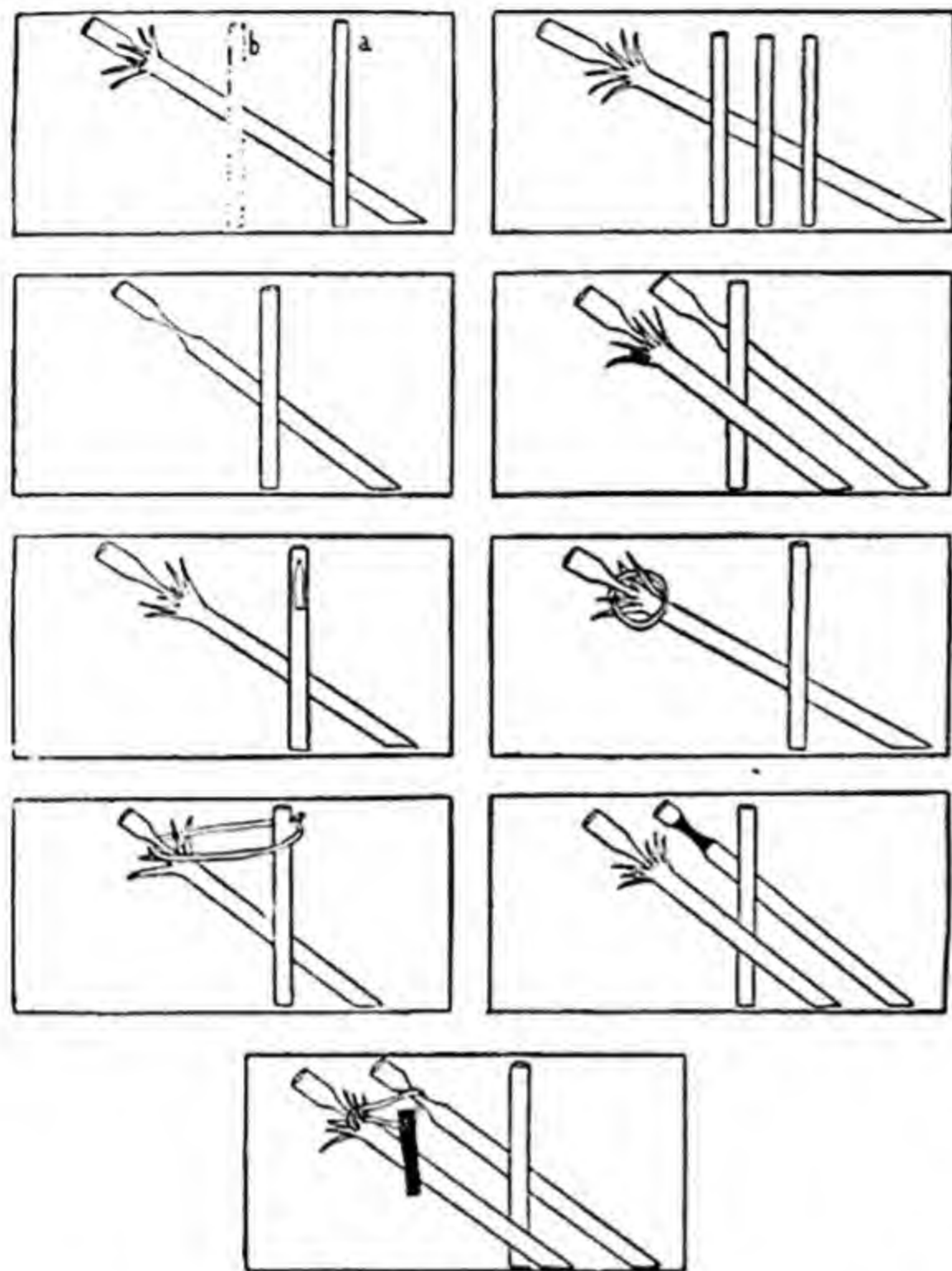
The same effect can be achieved by light signals. The Cibicu Indians used them in 1902 when the newly arriving government agent, accompanied by representatives of the Cibicu, descended the range toward their valley. These representatives began, as Reagan tells it, “to signal, by flashing sun-rays across the intervening space by small reflecting looking-glasses,” announcing that the white man was coming. “The reflected glasses of the valley answered back: ‘It is well. We are well. We have plenty to eat.’ And so on.” When the party finally arrived they found “every Indian in the valley there to receive them, having been called together by the signalling.”

To avoid the necessity of a continuous repetition of important signals, means were found to give such recurring messages a lasting quality. This is the purpose of the road signs, the warning signals, the appeals for help, and, in a way, of the property marks also.

The Shoshoni Indians build sign poles on heaps of stones, indicating the exact direction of water places. Kiatexamut Eskimo travellers indicate the way they have taken by grass-trimmed sticks planted along the trail. In Africa the Ewe of Togo let the experts of the jungle go ahead to show the group following the ‘right’ way by covering the ‘wrong’ trails with leaves and with grass. The Tungus indicate the presence of traps by cutting a small tree, attaching to it an arrow pointing downwards. This arrow points upwards if the hunter has left the neighbourhood.

But the trail is not only marked for the traveller—it may also display signs of warning to keep others away from regions of

acute danger. The Apache place a dead owl or its effigy, both images of death, on a trail leading to a place of disease. It has been reported that when smallpox broke out in their region owl effigies were placed at once on all the trails leading toward the camp and that "no Indian ventured that way, and consequently no one got the smallpox."



MONTAGNAIS-NASKAPI SIGNAL-
POSTS INDICATING THE NEED
OF ASSISTANCE

After Julius E. Lips

While such signs are destined to keep the passer-by away for his own good, others are erected to call him to a clearly defined place in order to bring help to some one in need. I saw such signs among the Montagnais-Naskapi Indians of Labrador who live in a subarctic climate on their huge, isolated hunting grounds, often many miles away from their next tribesmen. Since their living conditions are extremely severe they have developed a very efficient signal system of mutual assistance. A call for help directed to the anonymous public must be answered by anyone who happens to see it; refusal would be considered criminal. Notched sticks planted along the trail indicate the direction of the

stricken camp. In most cases the victims suffer from starvation or exposure. A prospective helper, seeing the sign, either hurries immediately to the place of need or, if he himself is not adequately equipped, attaches an additional message to the original pole, either stating when he will return or advising the next passer-by of what he should do to join the mission of mercy. These sticks tell the whole story: not only the direction of the stricken camp but also, by the depth of the grooved notches and their shape, the nature of the illness and the number of persons involved. Small wreaths woven of branches bring the helper's message to the attention of other passers-by. The blackening of the tell-tale notches announces that any additional helper would arrive too late, as death has already claimed its victims.

Property marks, very common among many peoples, are

announcements to the public that a certain object belongs to a certain person or group of persons ; as such, the announcement includes a suggestion of threat against a possible thief. Things may be the property of a whole group and so marked, like the canoes of the Eskimo or the reindeer herds of the Lapps and Tungus. The latter cut their property marks in the ears of their animals, while the Samoyeds burn them in their thighs. Each property symbol may be used only by those entitled to it, be they individual, family, or band. Its use is forbidden to anyone else. The same custom of branding the herds with property marks of the tribe or band is customary among the Arabs, who mark their camels, sheep and horses with their *wasm*. Property marks are also known among Canadian and American Indian tribes and, although this type of 'announcement' is not too frequent in South America, it is nevertheless used by the Mbaya, Ashluslay, and Chiriguano, who put their property marks on animals, slaves, or tools, and, last but not least, even on their women. The modern animal breeders of civilized countries stick to this ancient custom as most practical ; even race-horses thus wear their stables' crests. The initials on our own brief-cases, handbags, pieces of luggage, etc., belong to the same category.

Another group of communications is directed not merely 'to whom it may concern' but to specified individuals or a distinct group of persons. Such communications may be of a private nature like, for instance, a commercial order, or they may be of political or diplomatic content.

Among these the carved message sticks of the Australians are of a more mnemotechnic significance, since they require the interpretation of the messenger. The text, a mere memory aid to the carrier, may consist of invitations to feasts or initiation ceremonies, or it may be a regular commercial order like a carved stick sent by the 'firm' Sandy to the 'firm' Kangaroo requesting 'by express' a specified quantity of the narcotic pituri plant, for which prompt payment in spears and boomerangs was guaranteed.

Of an international nature are primitive 'diplomatic bundles' or 'diplomats' sticks,' which serve intertribal affairs. Such news-carrying bundles sent by American Indians to the United States



MESSAGE
STICK

Kimberleys,
Western
Australia
*After F. D.
McCarthy*

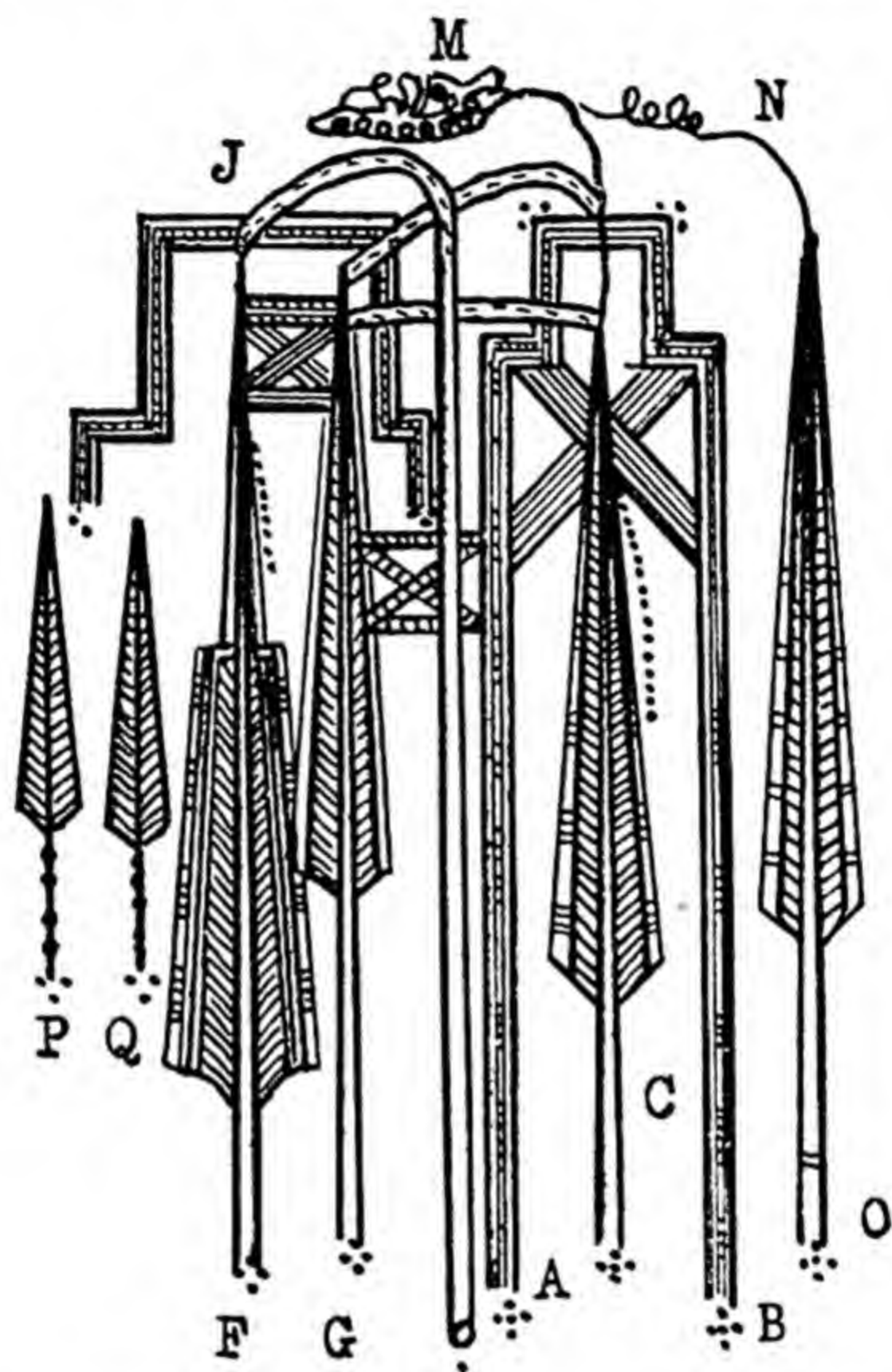
Government contain sometimes a feather-trimmed ear of corn whose hollowed-out inner part is filled with tobacco (offer of the pipe of peace). Around its centre a woollen cord is slung, also trimmed with yellow feathers. The message reads : "The pipe shall be smoked by the President." In other words, it is a declaration of peace.

For declaration of war, the Lutsu of eastern Tibet send a carved stick trimmed with feathers to their enemies, to advise them that many hundred warriors are already on their way to invade the land with the speed of a bird's flight. The Niam-Niam of Africa declare war by planting an ear of corn and a chicken feather in the enemies' path, attaching an arrow in a near-by branch. This means that anyone disregarding these signs will die by the arrow, especially if he should try to rob the fields or to kill other people's chickens.

Occasionally the contents of such messages or letters can be of an extremely personal nature ; they may even be love-letters. To this type of communication belongs the love-letter of a Yukagir girl scratched on birch bark, although it may not be without a touch of European influence. (*See illustration opposite.*) Its message is sad, written by a disappointed soul. In a house (*A* and *B*) sits the jilted girl (*C*), the letter-writer. The crossed lines indicate grief. The dotted line in the upper right of *C* is the girl's braid of hair. *F* is her rival, a Russian man stealer, with braids and skirt. *G* is the untrue lover whose infatuation with the Russian girl is evidenced by the cross lines of the upper ornament. The line *J*, leading from the rival to *A*, cuts through the love lines of the man *G* and the letter-writer. *M* is the latter's faithful thoughts. *O* is a Yukagir suitor who tries to win her affections. *P* and *Q* are the children of the unfaithful couple, *F* and *G*. Summed up, the message reads : "You left me for that Russian woman who blocks your way to me. You may even have children with her. I shall always grieve, thinking of you alone, although another man offers me his love."

Another variation of these international or personal mnemotechnic 'letters' is the method of establishing records with the help of counting boxes, knotted cords, or wampum belts. The Cara of Ecuador put pebbles of different shape, colour, and size into small wooden boxes to record numbers or occurrences. Similar boxes are in use also along the Peruvian coast-line. More famed are the *kipus* or knotted cords found in the ancient graves of Peru. They were mainly used to 'write down' administrative facts, registering the amounts of taxes received and the like. It

is true that poems and literary works have also been transcribed in such *kipus*, but their principal purpose remained the mnemonic support of the spoken word. The colours of the diverse strings indicate the object of the record (province, tribe, type of peoples involved, etc.); the shapes of the knots express numbers. 'Footnotes' were added by side-strings. These *kipus* had for



LOVE-LETTER OF A YUKAGIR GIRL

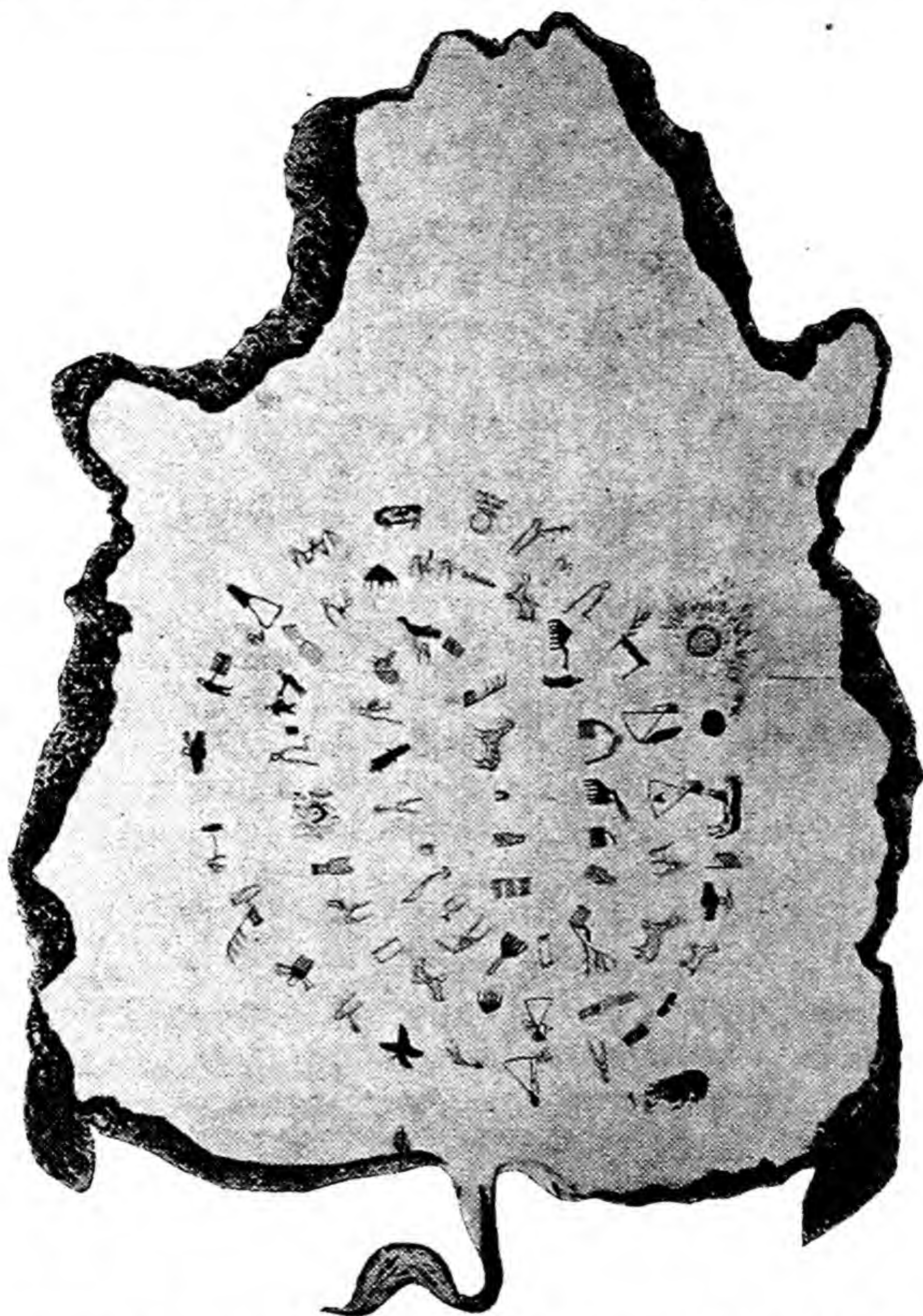
Birch bark

After K. Weule

their special guardian a government official known as the *kipu-camayox*. However, their use was not restricted to Peru alone. Ancient China and the regions influenced by its culture were another centre of *kipu* 'writing,' and this system is still in use among many Indian tribes of South America.

Occasionally combined with pictorial drawings, the wampum belts of North American Indian tribes served as legal instruments in concluding a contract. Although originally their 'texts' were decipherable only by the two contracting parties, they became a kind of regular news communication after the significance of their arrangement and their colours (white and purple) had become

commonly known. In 1682 William Penn concluded his famous territorial treaty with the chieftains of the Lenni-Lenape at Shakamaxon with such a wampum belt, which belt is to-day owned by the Pennsylvania Historical Society.



LONE DOG'S WINTER-COUNT PAINTED ON BUFFALO SKIN

Sioux Indians

American Museum of Natural History, New York

All these message-expressing tokens have one thing in common which raises their importance beyond the sounded and the flashed signals of older cultures: they are of a lasting nature; they constitute records. But still, they need an interpretation of the symbols used, and a correct interpretation at that.

Of a more realistic nature are pictures of things : they can speak for themselves. Thus we observe among the optical mediums of communication a clear trend towards the drawn picture as a means of expressing a message. The pictorial drawings and paintings of the arctic tribes, the Prairie Indians, the natives of the western Carolines, and the Pelew Islands furnish excellent examples of the development of this type of news communication. In the records of these peoples we find descriptions of everyday occurrences, of special events, and of the tribal traditions. The correctness of the recorded texts is continuously checked by the community, and heavy penalties are in store for scheming propagandists who try to mislead public opinion by reporting the news in a purposefully wrong or incorrect manner.

Most famed among the pictorial documents are the chronicles or 'winter-counts' of the North American Indians, in which important events in the history of the tribe were rendered permanent by drawings of the persons, animals, scenes, etc., involved. Well known is the *walam olum* (true-to-life painting) of the history of the Delaware Indians from 'pre-pale-face' times. Theirs and other tribes' lives and adventures are recorded in this fashion ; and we find on their painted buckskins, coats, and tent coverings the detailed stories of great floods, of wars, of abundance of food, of times of trial and deprivation, and of all occurrences that shaped the history of their people.

Pictorial reports sometimes read like a fascinating newspaper head-line. Take, for instance, the Eskimo report of a seal hunt in which a sequence of twelve drawings gives a vivid description. (*See illustration below.*) First, to the left, is the author, or master



ESKIMO PICTURE-WRITING

After K. Weule

of ceremonies, whose right hand points to himself, while his left hand indicates the direction in which the event came to pass. The man with the paddle next to him explains the way taken by the hunting canoe. The following little man tells the time needed to bring the hunters to the first destination of the expedition (right hand on head : to sleep ; left hand with one finger lifted : one night). The circle with the two dots is the scene of the first stop of the group : an island with two huts on it. To

the right of the island the author reappears to explain that the hunters moved on to a second island—this one without human abodes—where they slept for two nights (man with two fingers raised). At this point, excitement enters the story: two seals were sighted, as the right-hand gesture of the next man shows (the sign for 'seal' with two fingers outstretched). The hunters



OLD MEXICAN CODEX

Depicting Marriage Ceremony

After the marriage ceremony has been concluded by tying the newly-weds' mantles together with a knot the young husband carries his bride on his back to an inner room. Four torch-bearing women attendants accompany them

itself and by those who recall it, or by outsiders to whom each picture has been explained. If the drawings are simply used as pictures in their objective sense the margin of their interpretation may be wide. They can, at any rate, convey only the general idea expressed by the person who made the drawings, and this idea rather than the picture is the important factor.

In regions where picture writing and reading is profusely used by the population the white invader very often took advantage of these mediums by using the local talent to promote the teachings of the Christian religion. For the benefit of the natives of Mexico, Catholic priests ordered paintings of the entire catechism on great cloths which were shown to the people during services.

It was a long way from the development of the naturalistic,

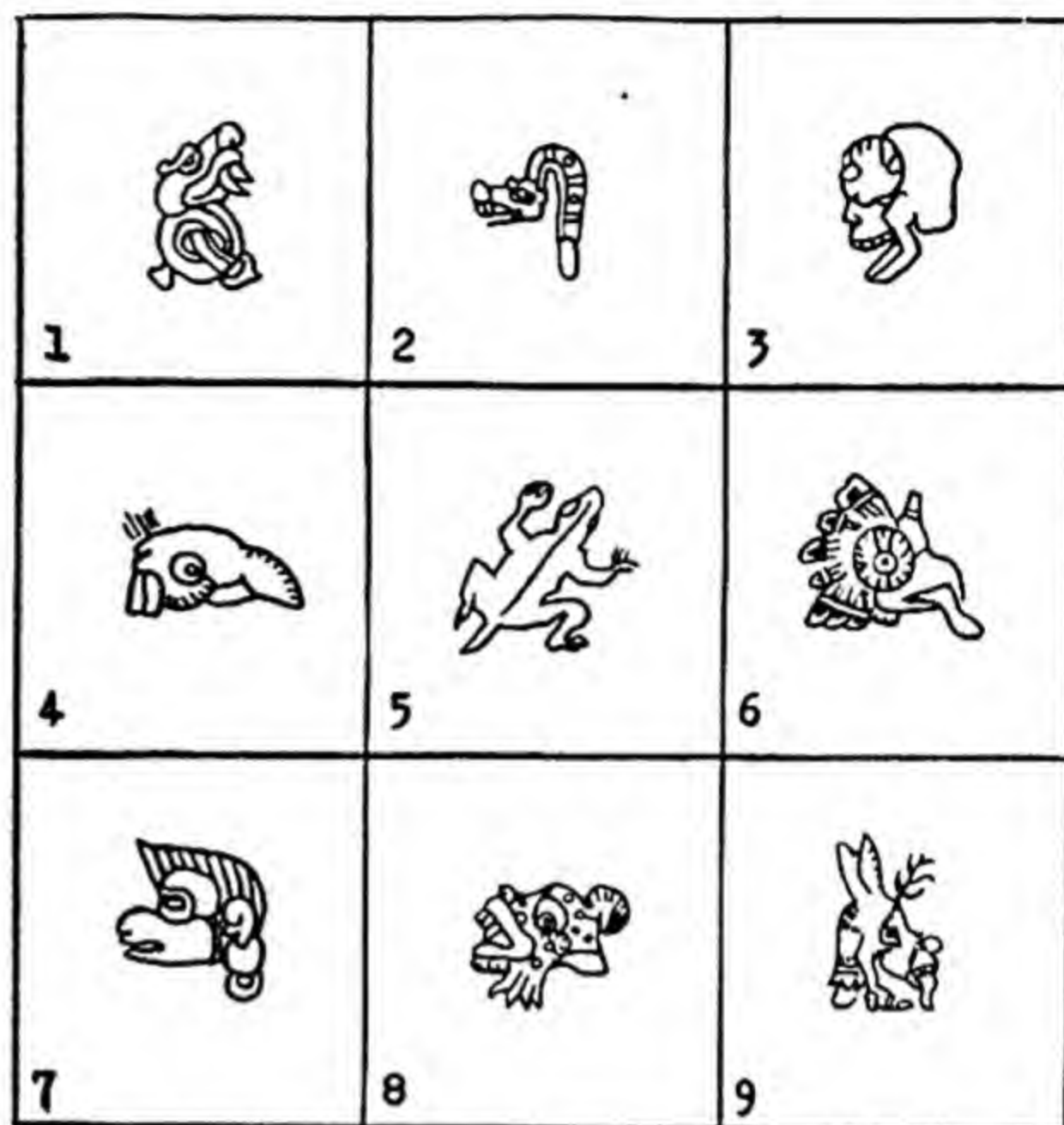
got their harpoons ready. The following image of a seal symbolizes the two game animals. They were shot with bow and arrow. The aim of the hunt thus being achieved, the men could return home (canoe with two occupants, their paddles in downward movement) to their durable winter houses, depicted in the last drawing, which represents an igloo. This ends the story of the seal hunt, as written down by an ace reporter.

But vivid as such pictorial descriptions may be, they still are by their very nature mere memory aids, fully understood in their significance only by the participants in the event

accurate drawing to the purely linear and abstract ornament—the fixed character which we call a letter. There was no quick jump from the pictorial symbol to the alphabet—the steps in between were the symbolized sentence, the word-characters, the writing in syllables, and finally, the phonetically composed letters grouped in fixed units called alphabets. Not until the appearance of definite characters of one unchangeable meaning, which any literate reader can reconstruct into words or letters of the spoken language, can we speak of script—the characteristic feature of each high culture. The tendency of this evolution is from concrete representation to abstract symbol, from the specifying picture to the character of general significance, and it is often difficult to recognize the original form, obliterated in the long sequence of the development.

The written characters of the Chinese, Babylonian, Sumerian, Assyrian, and Egyptian high cultures furnish excellent examples of this development. The Egyptian hieroglyphs can

be reconstructed to the original drawing of the object or idea that shaped their later script characters—be it the stone jug, realistically drawn about 2900 B.C. and transferred in eight different intermediating forms to the written character 'hnm' in about 400 B.C., or the equally naturalistic papyrus scroll of the third pre-Christian millennium, which became in similar fashion the sign 'md 3.t,' used for abstract notions. Even the modern Chinese script maintains in its clear characters a marvellously simplified picture



NINE OF THE TWENTY WEEK-DAYS

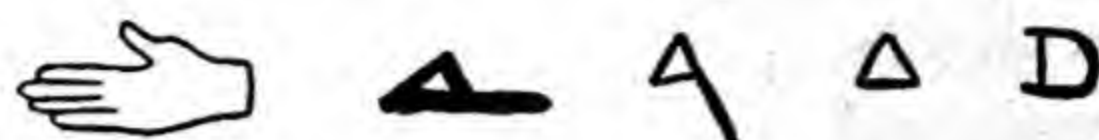
Calendar Symbols from Ancient Mexico,
also used as alphabetical Scheme

- (1) *couatl* (snake)—*Codex Bologna*
- (2) *couatl* (snake)—*Codex Vaticanus B*
- (3) *miquiztli* (death)—*Codex Hammaburgensis*
- (4) *tochtli* (rabbit)—*Codex Nutt.*
- (5) *cuetzpalin* (lizard)—*Codex Hammaburgensis*
- (6) *quauhtli* (eagle)—*Codex Nutt.*
- (7) *ozomatli* (monkey)—*Codex Nutt.*
- (8) *ocelotl* (jaguar)—*Codex Vaticanus B*
- (9) *mazatl* (deer)—*Codex Bologna*

After T. W. Danzel

of the original pictorial representation of the objects or notions they express.

The Assyrian cuneiforms, however, emancipated themselves



EVOLUTION OF THE LETTER 'D'

Egyptian hieroglyph; Egyptian letter; Phœnician letter; Greek letter; Latin letter

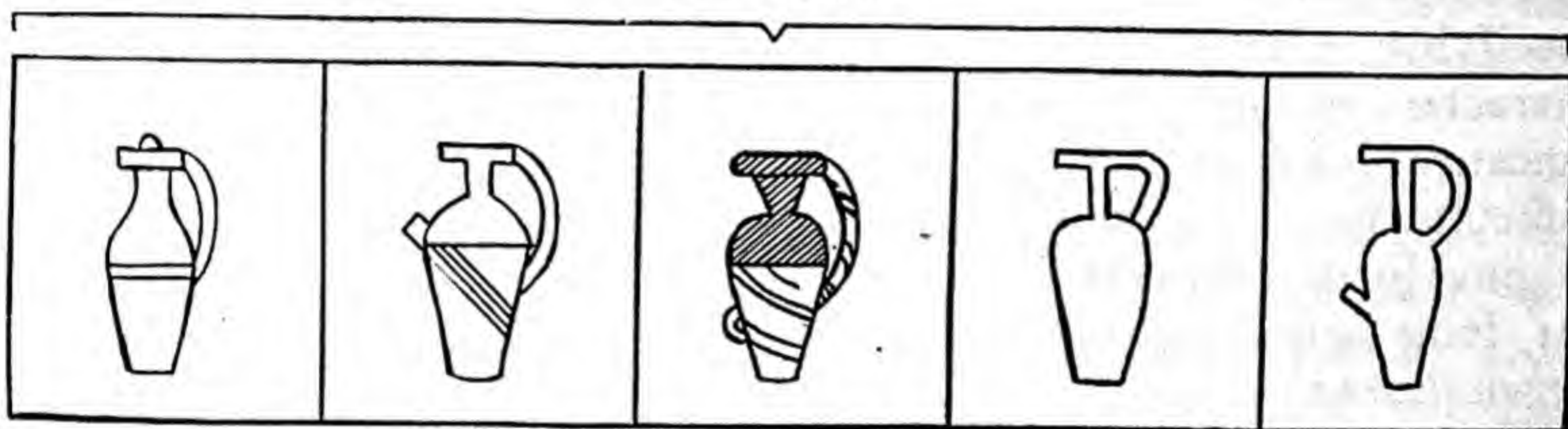
After K. Weule

from the naturalistic image at a very early time, and it is rather difficult to recognize the original picture in these arrow-headed or wedge-shaped characters.

FROM PICTURE TO LETTER: EGYPTIAN HIEROGLYPHS

STONE JUG WITH HANDLE: the sign 'hnm'

Hieroglyphs

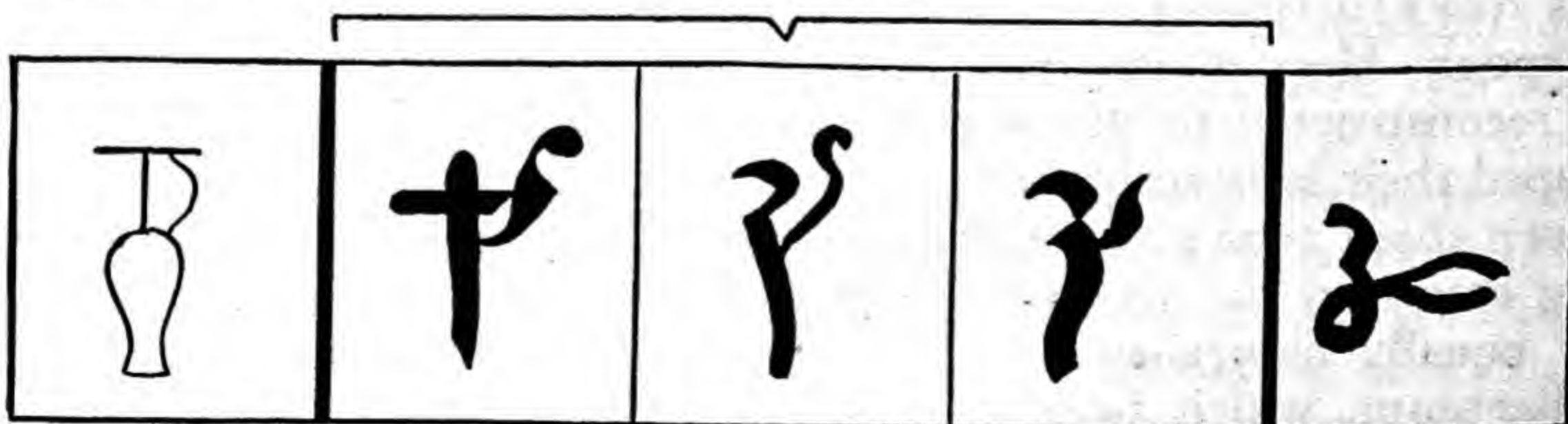


2900-2800 B.C. 2700-2600 B.C. 2000-1800 B.C. About 1500 B.C. 500-100 B.C.

Hieroglyph
(Book type)

'Hieratic'
or Handwritten
Characters

'Demotic'
or Popular
Script



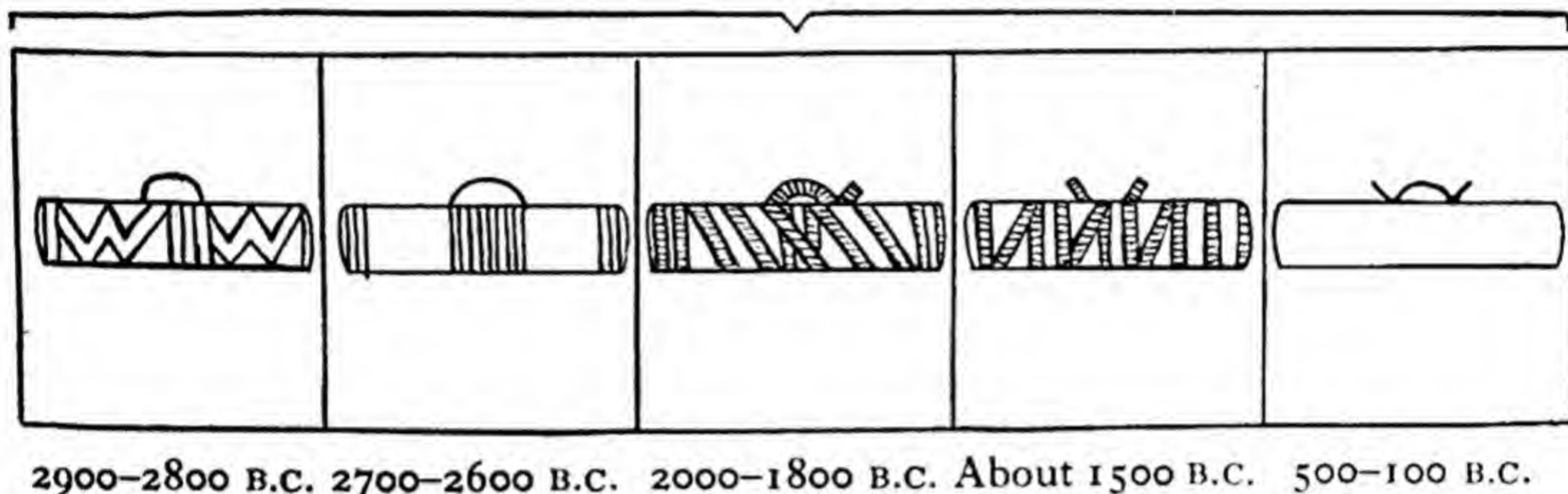
About 1500 B.C. About 1900 B.C. About 1300 B.C. About 200 B.C. 400-100 B.C.

After Möller

Our own alphabet probably goes back to the Phœnicians. Almost unchanged, it has survived the ages. Some modern sceptics, however, call it 'wasteful,' and one of its most renowned opponents, G. B. Shaw, repeatedly appealed to the British Government to appoint a committee of economic and statistical

FROM PICTURE TO LETTER: EGYPTIAN HIEROGLYPHS

PAPYRUS SCROLL: the sign 'md3.t' which signifies abstract notions
Hieroglyphs

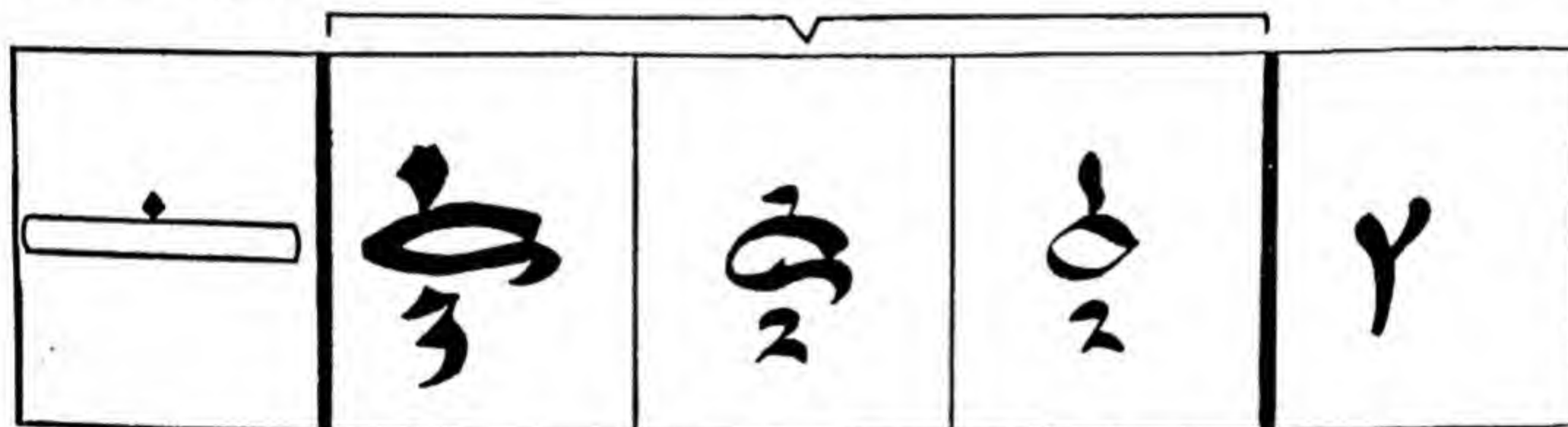


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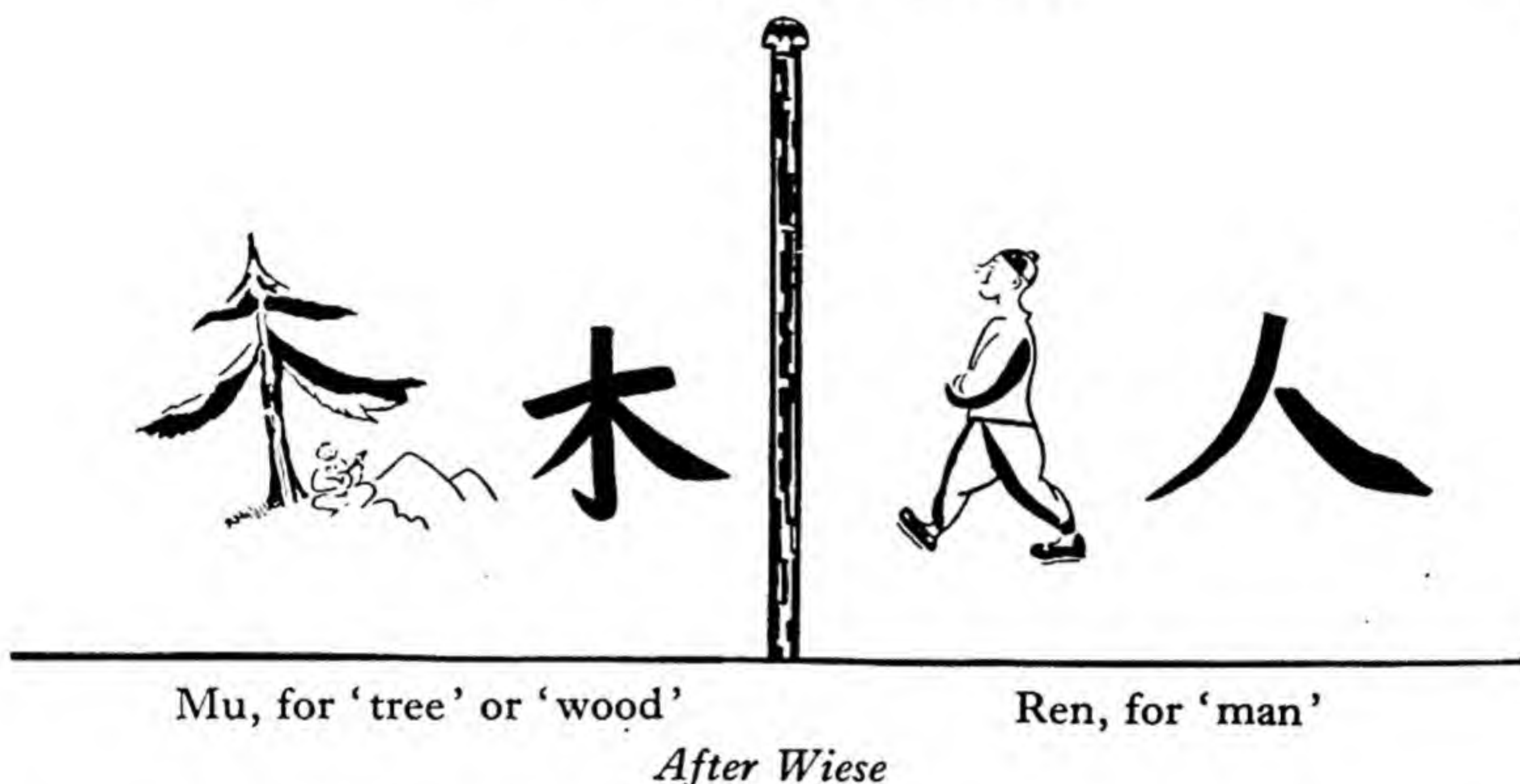
After Möller

experts to create a new phonetic English alphabet with no more than one sign for each sound. Claiming that a letter saved in spelling is saved not once but millions of times every day, he expressed during the Second World War the opinion that "if the Phœnician alphabet were only turned upside down and enlarged by seventeen letters from the Greek alphabet, it would soon pay for the war." Nevertheless, it has worked quite well through the millennia.

If mankind should want to erect a monument in honour of the illustrious inventor of script the identification of that genius would be impossible. Not one unknown and unsung individual

could possibly claim to be the originator of this achievement. We may say, however, that the priesthoods of the high cultures had a large part in the development and perfection of their countries' respective scripts. The knowledge of the art of writing, the ability to transcribe the spoken or memorized word in a permanent fashion, meant power — a power skilfully used by all those who executed political authority throughout the course of history. With this knowledge a new age began. History was now recorded. The traditions, the laws, and the creeds, the

CHINESE SYLLABIC LETTERS

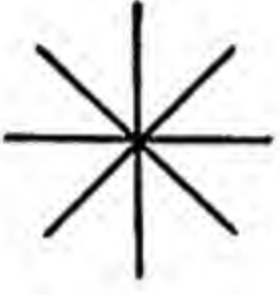

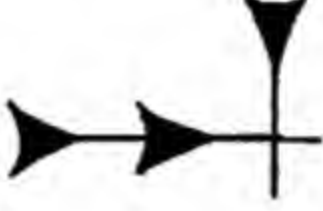






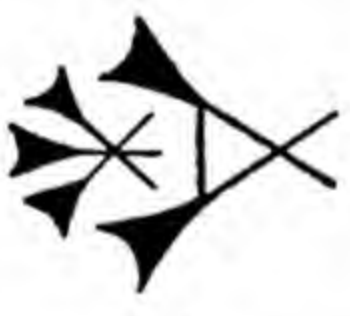




formerly memorized standard works of knowledge and of literature, could be put down in writing, to be preserved in the libraries of the rulers and in the temples. The average citizen, however, was excluded from the knowledge of script, which was reserved for the priests and the state and its servants.

The material which preserved the manifestations of this new art played a very important rôle. Plates of burned clay, used by the Babylonians and the Assyrians, were among the earliest book materials. The Egyptians used papyrus, and bundled palm leaves were the Indian equivalent. The use of the stems of the papyrus shrub (*Cyperus*), cut and glued and rolled into 'books,' was known in Egypt as far back as the third millennium B.C. Since about 1400 B.C. parchment or raw hide (chemically depilated and softened, then smoothed with brimstone) was used as 'writing paper.' This new material made the scroll-shaped 'books' obsolete, and led to the introduction of the present form of quadrangular books.

Parchment was a very costly material, and therefore some of the old texts were blotted out with sponges, and the raw hide was scraped and used again for literary documents. This thrifty habit has enabled modern science to decipher older layers of writing on such palimpsests (from the Greek *palin psestos*, 'scraped off'). It has led to the discovery of many very ancient

CUNEIFORM OR WEDGE-CHARACTERS

3000 B.C.	About 2000 B.C. (Hammurabi)	1000-600 B.C. (Assyrian)	New Babylonian (Nebuchadnezzar)
			
			
			

Top row: The syllable an meaning 'star,' 'God,' 'heaven,' 'above'
 Centre row: The syllable kur, mat, or shad, meaning 'mountains,' 'land'
 Bottom row: Pictorial symbol and script characters meaning 'dagger'

After Brünnow

manifestations of knowledge, among them a palimpsest in the British Museum on which a Syrian text of the eleventh century was written over a Roman text of the ninth century which, in turn, covered a seventh-century manuscript by Granius Licianus in *Unzial* script.

The importance of the material in the evolution of the book is indicated by the fact that the Latin *liber* means 'inner bark' or 'bast' and that the Greek *biblos* stands for 'papyrus,' the material on which their 'books' were written.

The preciousness of the materials and the painful procedure of writing and copying books by hand made the possession of a book a privilege enjoyed by very few people. Only the invention

of paper and the art of printing opened the road towards a wide distribution of the cherished texts. It was probably the Chinese who invented paper, during the second century A.D., and in this case even the name of the genius has been recorded. Ts'ai Lun was the name of the man who used bark, rags, hemp, and fishing-nets for his first experiments. Through Chinese prisoners of war, the knowledge of paper came, during the eighth century A.D., to Turkestan. A government paper plant was founded in Baghdad in 794. The knowledge of how to make paper migrated with the Arabs to Europe where, in 1340, the first paper mill was established at Fabriano in Italy. The added invention of printing, about one hundred years later, opened the road for the slogan "Knowledge for all!" and marks the beginning of the book in our present sense.

While the main task of the book was, and is, the distribution of knowledge, art, or entertainment, it did not primarily serve as a medium of news communication. The use of the printed word for the purpose of spreading the news came not until the sixteenth century, with the religious 'Relations' and the pamphlets of the Reformation. The first periodically published newspapers date back to 1609; they appeared in Augsburg and Strasbourg. Significantly enough, the ancient Anglo-Saxon word *getidan* and German *Zeitung*, both terms for the newspaper, mean 'news.'

With the development of the newspaper, and the growing urge to get the news in the quickest fashion possible, came the development of the news services, from the horseback express messenger who 'rode post' to our modern news agencies and their magic slave, the electric spark. And, indeed, electricity in one form or another, be it as radar, television, or radio telegraph and radio broadcasting, is to-day the servant for ear and eye alike; and acoustic and optic means of communication are now equally efficacious. Primitive man could not muster such magic.

But even to-day, besides these super-refined systems of modern news communication, our civilization has maintained many methods of the oldest times, for instance, the rockets shooting the S O S of shipwrecked sailors into the skies. Railway, military, and naval optical signals still remind us of the smoke-and-fire language, and the reflection signals of the primitives. The fog-horn and the Morse alphabet are kindred to the sound codes of the drums of the wilderness. The radio message speaks—but to the majority of the global population it is nothing but just another new devilish device of the white man.

CHAPTER TEN

Education without Books

✓ EDUCATION IS ONE of the key words of our time. A man without an education, many of us believe, is an unfortunate victim of adverse circumstances deprived of one of the greatest twentieth-century opportunities. Convinced of the importance of education, modern states 'invest' in institutions of learning to get back 'interest' in the form of a large group of enlightened young men and women who are potential leaders. Education, with its cycles of instruction so carefully worked out, punctuated by text-books—those purchasable wells of wisdom—what would civilization be like without its benefits?

So much is certain : that we would have doctors and preachers, lawyers and defendants, marriages and births—but our spiritual outlook would be different. We would lay stress on 'facts and figures' and more on a good memory, on applied psychology, and on the capacity of a man to get along with his fellow-citizens. If our educational system were fashioned after its bookless past we would have the most democratic form of 'college' imaginable. Among the people whom we like to call savages all knowledge inherited by tradition is shared by all ; it is taught to every member of the tribe so that in this respect everybody is equally equipped for life.

It is the ideal condition of the 'equal start' which only our most progressive forms of modern education try to regain. In primitive cultures the obligation to seek and to receive the traditional instruction is binding on all. There are no 'illiterates'—if the term can be applied to peoples without a script—while our own compulsory school attendance became law in Germany in 1642, in France in 1806, and in England in 1876, and is still non-existent in a number of 'civilized' nations. This shows how long it was before we deemed it necessary to make sure that all our children could share in the knowledge accumulated by the 'happy few' during the past centuries.

✓ Education in the wilderness is not a matter of monetary means. All are entitled to an equal start. There is none of the hurry which, in our society, often hampers the full development of a growing personality. There, a child grows up under the ever-present attention of his parents ; therefore the jungles and the savannahs know of no 'juvenile delinquency.' No necessity of

making a living away from home results in neglect of children, and no father is confronted with his inability to 'buy' an education for his child.

In his perfect individual freedom the man of nature shares with the members of the animal kingdom the privilege of passing on to his offspring the skills necessary for survival. Close contact with his animal brethren shows him the Australian koala bear teaching its young how to climb the eucalyptus, their tree of life. He observes the raccoon mother patiently showing her baby the dainty art of washing food before eating it; he watches the seal in the rôle of swimming instructor for its child. In similar ways he instructs his own offspring. Even if these skills are mere physical necessities of life and cannot be included in the term 'education,' as we understand it, they undoubtedly have spiritual value.

There is not a single people on earth where the effort of education does not embrace a twofold aim: the teaching of the technical inheritance of the particular society for the sake of making a livelihood, and, more important and more painstakingly pursued, the endeavour to provide the child, the adolescent, the young man or woman, with a proper appreciation of the ethical, intellectual, and religious values that hold their community together. The means by which these aims are achieved are as manifold as the shades of human skin and the number of dialects spoken on this earth. By this feeling of responsibility, even primitive man demonstrates his superiority over the lower beings around him. That the spoken word rather than the printed book is his manual of instruction does not matter; there are no professional teachers yet, but mother or father or revered old man are the able helmsmen steering the boat of instruction through the great stream of tradition.

For what kind of world do the peoples without written history prepare their sons and daughters? While their world may lack most of the gadgets which we consider progressive, in many respects it is much richer, more involved, more complicated than the normated and specialized forms of the modern civilized world. The closer a society is to the cradle of mankind, the older, the farther removed, are its conceptions from the specialized distinctions of present-day thinking.

There are no border-lines to separate the visible world from the invisible—the pebble, the rock, the moon, the stars, the plants, and the animals are animated partners of man, carriers of friendly or of hostile forces that require continuous watching, tending, and conjuring. The mere handling of even the tools of everyday routine, the digging stick or the grinding slab, the animal trap or

the carrying basket, may require the observance of certain traditional laws of respect or taboo which may seem superfluous to us. But to the children of nature they are as real as the grains of the wild grass, as night and day, as fish and fowl. The non-observance of one such vital yet unwritten rule might cause peril for the entire



INDIAN BABY, INSPECTING WORLD FROM GRANDMOTHER'S BACK

Montagnais-Naskapi, Labrador

Photo Julius E. Lips

community in a society where the whole tribe is often responsible for one offensive act committed by one of its members.

The Zuñi, for instance, respect all objects as *ho'i* or 'living persons'; the Californian Tübatulabal would not dare to dig a sacred Jimson-weed (*Datura meteloides*) root without honouring it with a short, respectful address; and woe would befall the whole tribe of the Creeks if one of their girls or women should dare to leave her monthly 'lunar retreat' before the proper time had elapsed. This fact, that the neglect or abuse of sacred rules by one single person may endanger the safety of all, makes education among primitive peoples a vital issue for the entire group. The hazards of nature and the revengeful attitude of countless threatening

spirits make it a necessity to raise the tribe's offspring in an attitude of awe and of responsibility unknown in our less hazardous form of civilization.

Therefore, education in carefulness and respect cannot begin too early. As soon as the painstakingly observed rites accompanying each birth and name-giving are over and the physical life of the new baby seems safe his cradle and his body are protected by charms, prayers, and good wishes. But his developing soul is watched even more carefully, and it is gradually impregnated with the wisdom of olden times. From his earliest days, the child is carried about by his mother while she collects firewood, works on the plantation, and during the manufacture of household articles. Whether he rides her hips, as in Africa, or sees the world from her back in one of the ingenious Indian baby carriers, he has a part in all her activities, and soon his little fingers will stretch out to grasp the tools she handles. His wide-eyed stare will accompany her movements at sacred dances, her handling of ceremonial objects, and her conversations on the powers of the dead.

At this tender age the primitive child is entirely his mother's. She loves him dearly, and calls him pet names. Even his surroundings are arranged in a sensitive and significant way. The Chicksaw Indians of Oklahoma like to bed their male babies on panther skins to benefit them with the cunning, strength, and vigour of that superior animal, while they choose for their little girls a layette of fawn or buffalo calves' skins to make them gentle and shy.

Any emphasis on physical punishment of small children is almost unknown among primitive peoples, although there are other methods on record of how to stun a child into obedience for disciplinary purposes. Among such harmless practices is the habit among the African Pangwe of having men and older boys set a bull roarer into action outside the abode. Its 'voice' is interpreted to the small fry as that of a mighty spirit, *Ebzibongo*, the Child Eater. Another device for the same purpose is beating the soil with a wooden pole, accompanying this by the sombre murmur: "The bad man . . . he has arrived. . . ." These methods furnish the child with an early appreciation of the powers of the unknown. The Chippewa Indians have a similar idea: they frighten disobedient children by telling them that a bear's paw will "come and get them."

Sometimes the threat comes true, and an old stuffed moccasin, navigated by a stick from the outside, slowly appears in the tent as the 'bear's paw,' to the horror of the little offenders. In severe cases an occasional slap may become necessary, but hardly ever any

substantial beatings or whippings. A strange manner of disciplining a naughty child is customary among the Creek Indians: the mother scratches his legs and thighs with a sharp, two-toothed gar-fish jaw-bone until blood appears. The explanation given for this seemingly cruel practice centres in the belief that such bleeding of a child has more sanitary than disciplinary advantage. There is no need to say that all primitive peoples train their children in the tribe's standards of bodily cleanliness. This training is especially rigid among many Indian and Eskimo tribes whose children participate from their earliest years in the customs of steam bathing and of frequent dips in rivers, even if the ice has to be broken first.

Just as with our children, example is the first teacher. This holds especially true when it comes to the concepts of tact, decency, and etiquette, which are generally of a very involved nature. The sense of shame, for instance, is by no means inborn in man, and its utterances change surprisingly all over the globe. The little Nor-Papua girl of New Guinea, for instance, is by no means embarrassed by her nakedness, but her face will get very red indeed if someone catches her without the kerchief that is supposed to dangle from her head. Some African and South American tribes maintain the same innocence concerning their complete lack of clothing, but to be seen while eating is considered an outrageous offence.

The otherwise more than liberal West African Pangwe have the word *oson* (sense of shame) continually on their lips and in their minds, and they hate the white explorer for not understanding such fine hints as "I have to run for firewood," or, "I look for the trap," which their feeling for *oson* forces them to invent when the urge of nature comes. It is one of the Pangwe's main practices while visiting another village to ask tactfully, "Where is the way to the village master?" or, "If I should be persecuted, whereto would I have to turn?"—all circumlocutions of the shunned word *eduk*, or 'out-house,' which no well-bred Pangwe will ever utter.

The feeling of tactfulness is extended even to the birds. The ancestors of the Yamana of Tierra del Fuego once insulted the very sensitive Laxuwa-bird (to them "the first robin of spring") by their joyous shouts, "Spring is here! There flies a Laxuwa!"—whereupon the offended messenger of spring sent them snow and ice to kill many people. If he flies by nowadays people stand in silent respect to honour his shyness.

The very involved greeting customs require even more care, since their non-observance may cause bad luck, illness, or even war. Some tribes cower until a stranger is close enough to recognize their peaceful attitude; others humiliate themselves by kneeling or

throwing themselves flat on the soil. Hat, shoes, or other parts of the attire are taken off ; or respect may require the avoiding of the other's eye, or even the turning of one's back in his direction. Many primitives consider it rude to address a stranger, and they invite him silently into the abode to feed him ; only after he has rested are the first greetings exchanged. When Stefansson visited a strange tribe in the Mackenzie district a large crowd assembled from which each individual tribesman stepped forth to introduce himself with the words : " I am So-and-so. I am well disposed. I have no knife. Who are you ? " One of the most popular greetings is the rubbing of noses, not only as a form of salute but also as a supreme expression of affection. The Miskito of Honduras rub their bodies with their noses, calling this ' to hear the scent,' and the reporting explorer adds : " Our manner of kissing is abhorred and looked upon as a mild form of cannibalism."

All these customs are habitually taken in by the baby, and soon become part of his behaviour without further teaching. The age between infancy and adolescence is regarded by many primitives as partly irresponsible, partly angelic. A child simply cannot commit a crime. His wrong-doings are easily forgiven. To many West African tribes a child is " an earlier stage of human existence, as the caterpillar, that pre-development of a butterfly," as Tessmann puts it. Dividing mankind into two groups, the ' good,' *bebin*, and the ' bad,' *bongus*, the Pangwe do not hesitate to classify the children among the *bebin*. The same explorer tells of twenty-year-old young men who tried to excuse their wrongs by claiming that they were ' just children ' and therefore ' good.' That this conception is not regarded as paradoxical also among other tribes is evidenced by the fact that the Koyemci clowns of the holy Zuñi ceremonies, although played by grown men, are considered ' mythological children.'

When the golden age of early childhood is passed we find a stronger tendency in the boys to stick to their fathers and to imitate their actions as trappers, hunters, warriors, fishermen, or whatever they may be. This natural hero-worship leads them to the manufacture of small-sized tools and weapons fashioned exactly after the objects handled by their fathers. Tiny traps for grasshoppers or mice work efficiently after the principle which catches the father's full-sized game ; fishing devices, plantation tools, game bags, crossbows, drums, and numerous other ' toys ' are most efficient demonstrative material of the ways of a future tribesman, and gradually the different trades, inventions, and industries of the band are mastered by the growing boy under the eyes of his father and his friends.

The same holds true for the girls who, playfully first, later spurred by ambition, imitate their mothers' moccasin-making, manioc-roasting, acorn-gathering, spinning, weaving, and cosmetic tricks until they have acquired full knowledge of these skills. There is not one tribe known where the parents do not encourage their children's efforts in this respect with continuous teachings about the origin of these trades and skills, the mythical forefathers who introduced them to the tribe, the animal spirits connected with them, the supernatural beings on whose grace success depends, and all the wealth of their beliefs and their traditions.

Gradually the children thus leave the 'angelic' age of innocence to enter the state of awkwardness known as adolescence. And just as in our society, they are now given to mischief, and undergo the first spells of the instability so typical of their age. Their games become at times less innocent, and the ethical standards of their group are well reflected in their actions. They may become extremely shy and restrained, or they may imitate their parents' actions in too realistic a way at an age when they are supposed to remain in a state of infantile purity.

The children of many West African tribes, of New Guinea, and of Melanesia, develop very early in this respect, while others publicly pretend an innocence that is no longer theirs. This conduct, half childish still, may also lead to blasphemous imitations of the most sacred customs of their own people. While their parents preserve the skulls of the ancestors ceremoniously in holy barrels of wood, crowned by revered wood carvings, the Pangwe children keep monkeys' skulls in small containers of palm marrow to imitate with them the sacred skull dances held by their parents in times of stress.

At this age the growing children often experience a change of attitude on the part of their elders. Not all their pranks are readily excused; they encounter impatience and a certain intolerance because of their status of not yet belonging to the 'inner circle.' Deprived of the advantages of childhood, they still find themselves excluded from the privileges enjoyed by the grown-ups, the initiated.

This condition is made use of by their families; they are expected to take care of certain disagreeable duties, and are bossed around by their elder brothers, while the men do not allow their participation in 'grown-up' affairs. Under no circumstances, for instance, may a boy of the Euahlayi tribe, not yet formally accepted into manhood, kindle the fire which is considered the essence of virile vitality. In the olden times of American history the young men of the Creeks were "obliged to light pipes, bring wood, and help to

cook black-drink for the warriors, and perform all menial services of the public square." Swan, the old author, claims that such treatment "stimulates them to push abroad, and at all hazards obtain a scalp, or as they term it, bring in the hair," because only after this achievement were they regarded as men.



ANCIENT GHOST MASK FOR INITIATION CEREMONIES

Kiari, New Guinea

Museum of Ethnology, Cologne

When the young men and women reach physical maturity most tribes take official note of this fact by accepting them ceremoniously into the community. It is the exception rather than the rule when no official initiation rituals take place, as Turquetil claims of the Eskimo of Hudson's Bay and Voegelin of the Californian Tübatulabal, although we learn that, in the latter case, the young girls were instructed "in womanly matters" by their mothers and grandmothers and that old men "often lectured" to the male youth "about hunting customs and how they were to behave." And in the first case we are told that after they reach maturity the girls'

attire was changed into that of women. They now wore caps on their heads.

Whether or not a formal celebration, a 'confirmation' similar to the one known in our high-culture religions, actually takes place, the practical instruction in the technical skills of the forefathers and the ethical and religious knowledge of the tribe—the instruction in civics, social behaviour, mutual assistance, and all the necessary 'do's and don'ts'—are completed at the age of physical maturity, and the young tribesman or woman can now safely be regarded a full-fledged member of the community. If a 'graduation' takes place it is always preceded by a special period of instruction in which educational, physical, and mystical conceptions are pressed into a rigidly followed scheme—the ritual of the initiation ceremonies.

Much has been said and written about this most important ritual by which the young man or woman of the jungle, the deserts, and the bush is accepted into the community of his or her people. Among the best interpreters of the facts is the Swiss scientist, Speiser. According to him, the deepest meaning of the primitive initiation is a communion with the most important foodstuffs of the tribe. These vital sources of subsistence are in the trust of certain mystical powers which yield their gifts only to those who have earned the privilege by undergoing the sacred rites of the initiation. As a child, the boy was fed by his parents. On the threshold of manhood he has to earn the benevolence of the mighty trustees of fertility before he is allowed to share their gifts. In the age between childhood and initiation he is not allowed to touch the all-important foods; to him they are taboo.

In the oldest cultures the sacred powers, the trustees of the important foods, are the ancestors, which explains in part the ancestor worship taken over by so many of the ancient high cultures. In the agricultural societies the 'fertility demons' are considered trustees of the sacred possessions, although the ancestors still act as intermediaries between them and mortals. It is the ancestors who help the novice to win their graces; it is they who add to the gifts of food the physical powers of adulthood. To win these powers the child has to die, the adult individual has to be born—a fact which is symbolically performed at all initiation ceremonies. This line of thinking results in the programme of the initiation period: the beginning of the food taboos; the kidnapping of the 'child' by the spirits of the dead; the preparation period for the communion: seclusion, instruction in the laws of food and its preparation, with the 'spirits' serving as instructors; physical invigoration

of the boy to bring about his maturity ; communion under the assistance of a 'ghost,' a representative of the dead ; lifting of the food taboos ; acceptance of the novice as a full-grown man.

But not boys alone undergo the ceremonies. In the oldest cultures, where the hunt (pursued by the men) and the gathering of vegetal food (taken care of by the women) are of equal importance or the economic survival of the tribe, both sexes undergo the ceremonies separately, with equal vigour. In the agricultural stage, in which the importance of cultivated plants is paramount, the initiation rites of the female sex overshadow the importance of the 'graduation' of the boys.

When boys undergo the ceremonies they have to demonstrate to the community that they are in full possession of the qualities that make a man. Tests of individual courage are obligatory ; and the symbolic death of childhood often results in actual martyrdom. The long periods of intellectual and physical preparation take place in seclusion in the wilderness, far removed from the comforts of home and from the presence of the other sex. Under the leadership of older men who play for them the rôles of the spirits they undergo their rigid ordeal. The final climax is the revelation of the mystical origin secrets never revealed to the women. Only then are they ready for the holy communion.

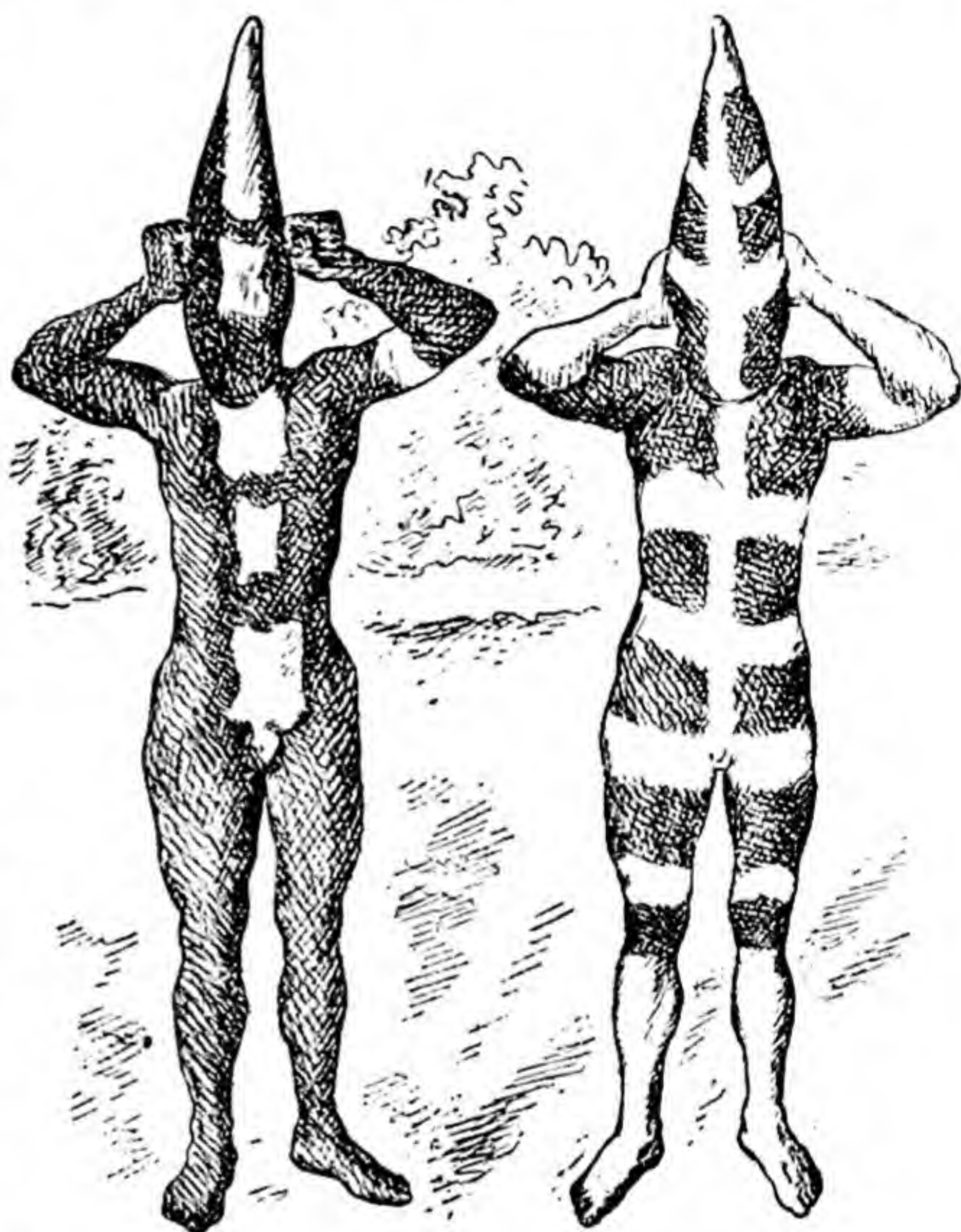
There is no fixed age which would determine the exact moment when a boy is considered ready for his graduation—he may be nine or ten, fifteen or sixteen, years old. Sometimes he has to wait until a suitable group has been assembled for the mutual instruction ; in other cases climatic or food conditions may delay or speed up the great event.

What, now, are these ceremonies actually like ? Since these sanctified traditions belong to the holiest possessions of any tribe and since their very nature is one of utter secrecy it is extremely difficult to gain reliable facts on the actual procedure. The rites are almost inaccessible to any non-tribesman and, of course, to most explorers. Only such scientists as have enjoyed years of most intimate contact with the natives and who possess, at the same time, the proper anthropological background, are in a position to reveal to us the secrets of the initiation rites. Men like the British explorer, Howitt, who himself underwent the initiation rites of the south-east Australian Kurnai, and Gusinde, who lived for many years with and among the Selk'nam at the southernmost tip of the South American continent in Tierra del Fuego and was finally accepted into their tribal community, have furnished us with

factually correct descriptions. Gusinde's experiences among the Selk'nam are a vivid example.

After proper contemplation by the revered old men of the tribe, a date is set to relieve them of their 'heavy obligation': to reveal to the new male generation the fundamental secrets of their people's history and to bestow upon them the privileges derived therefrom. No age limit is set, the only requirements being sufficient mental maturity, a proper attitude of dignified restraint towards the other sex, will-power, and, most of all, the ability to keep the entrusted secrets. The old men say: "We observe a fellow whether he can hold his tongue; whether he has distanced himself from childish play, and whether he masters our trades. If he does not live up to our expectations we let him wait for the next rites." If he meets the requirements he is accepted as a *klótek*, or candidate. As soon as the group of boys has been selected their principal tutor is chosen—the father of the oldest participant. After this, the wise men agree on the proper locality: it must be completely secluded, preferably on the outskirts of a forest, separated by a large *pampa* from the camp, and near a beach with an abundant guanaco and wild-goose supply to provide for the feeding of the group. On the wooded fringe a roomy hut, the *ha'in*, is erected as a home for the candidates. They say good-bye to their families; the women are crying and weeping. Their entire bodies painted red, the *klóteks* follow their leader, 'trembling with fear,' to be escorted to the *ha'in*.

Immediately a masked ghost appears, known to the novices since



'GHOSTS' FRIGHTENING THE INITIATION
CANDIDATES

Selk'nam, Tierra del Fuego

After M. Gusinde

childhood days as the fierce *Šoórte*, who now challenges an individual *klótek* in a wrestling match. When the latter breaks down from exhaustion, the perspiration of fear on his forehead, he is asked by the assembled men to lift with his own hands *Šoórte's* mask—under which he recognizes to his amazement the familiar face of a fellow-tribesman. He is advised that the now shattered misconception of his younger years, to believe *Šoórte* a ghost, was just one of the clever devices with which women and children are kept in awe and respect. The betrayer of this secret is doomed to immediate death.

The daily routine of a *klótek* is extremely severe. The position of his body while in the sacred hut is rigidly prescribed. He must neither speak nor laugh; his eyes have to be fixed on the ground. His food is kept to a minimum; he is allowed very little sleep. His days and many of his nights are spent on long excursions through the woods and over the mountains, always under the leadership of an older man. To improve his ability with bow and arrow he must regularly practise target shooting, and when he comes home, all worn out, he has to listen in the prescribed stiff position to the instructions in civics and history.

The following topics are the main subjects of his courses: "industriousness, dependability, respect for older persons, obedience, altruism, readiness to assist others, sociability, and marital faithfulness." After these rudimentary subjects have been dealt with in full detail he is ready for the revelation of the mythological secrets of his tribe. He learns that all 'ghosts,' in whose identity as supernatural beings the women and children firmly believe, are the men of the tribe, who wear masks on their heads and paint their bodies red, white, and black. The dominating figures among them are *Xálpén*—described as 'female' to add to the confusion of the women—and her 'husband,' *Šoórte*.

It may take months before the climax of the training period is reached. This is the revelation of the origin myth, the holiest secret of the Selk'nam tribe, which is narrated by the most venerable of the old men and begins with the words: "In the olden times, sun and moon, stars and winds, mountains and rivers walked on earth in human shape, so as we do to-day. . . ." This myth reveals the former predominance of the women of the tribe and how they betrayed the man, the men's revolt (in the course of which sun and moon and animals took their present shape and fled to their present places), and the men's resolution to invent for their own future protection the sagas of the masked ghosts who are now played by the men themselves. The betrayer of the secret will be killed on

the spot—but it is never necessary. The Selk'nam men have kept their secret through the centuries, and they are keeping it to-day when they step out in the full moon during the final nights of the rites to walk slowly and ceremoniously over the *pampa* from their sacred hut, accompanied by new fellow-keepers of the secret, the former *klóteks*, watched from afar by the awed women.



HOPI INITIATION
Whipping a Boy Candidate
After Dorsey-Voth

When we consider that the Selk'nam are among the most primitive tribes known we may well be amazed at their deep sincerity and their emphasis on civic virtues. Compared with our more 'encyclopaedic' form of schooling, which lays much less stress on moral values, this type of education does not seem 'savage' at all. The Australian experiences of Howitt among another tribe of hunters and food gatherers are similarly impressive.

All tribes that feature initiation rites consider the moment when the innermost mythological secrets of origin are revealed as the holy climax. The Zuñi Indian novices, for instance, learn at this moment the 'true' story of their own sacred connexions with the

ancient *Katcina* masks which appear at their annual feasts of fertility. These 'divine' masks are handed down from generation to generation.

Thus many of the mystical phenomena which we are inclined to interpret as mere fables or tales—these stories of the sacred masks, for example—take the place in primitive minds of religion, of history, and of ethical example. They are as real to them as the stories of the Magna Carta or of the American Pilgrim Fathers are to us. Indeed, the intensity of their influence is much stronger because the ancestor spirits and the forces of nature still move about among primitive people and may intrude upon any individual destiny at any time. They are revengeful if blasphemously challenged; they can bring all the blessings of nature if correctly revered; and they are alive—a faculty which can never be assumed by even the most powerful figures prominent in our own history.

No wonder, then, that the moment of cognition is so important in every man's life. The fact that the sacred shapes are imitated by mortals does not in any way diminish their godlike qualities.

Some initiation rites emphasize the death-and-resurrection *motif* in a most extreme way. Often the candidates are painted white from head to toe to indicate that, for the time of their seclusion, they are no longer regarded as living human beings (their childhood is dead); that they are ghost-like creatures until they will be reborn as men in the final communion with the ancestral spirits or the fertility demons. But before they reach that goal not only are their minds stunned by revelations, but their bodies have to endure actual torture.

Of an especially cruel nature in this respect was the annual initiation rite of the Mandan Indians which culminated in the fearsome *pohk-hong* or hook-swinging. The candidates' skin was incised to allow the application of skewers by an officiant who was masked in order to conceal his identity from the novices. Heavy buffalo skulls were attached to these skewers. The details of the ordeal itself have been vividly described by MacLeod:

The Mandan lodge has four centre poles. Each victim has ropes attached to his skewers, and with these he is raised on one of the four poles, suspended in the air. He is naked, but in his hand carries his medicine bag; and his shield is hung from one of his skewers. When suspended, he is then twirled around on his own axis by an attendant. In the course of the twirling he faints. Then the onlookers cry "Dead," and he is lowered and laid on the ground. No one will assist a fainted hook-swinger. He is left to lie where he fell outside of the sacred lodge until he dies

(which very rarely happens) or until he revives. It is considered by the celebrants that in the first case the Great Spirit takes him; in the other case, the Spirit returns him to life.

As though this were not enough the revived candidate makes an additional offering to the Great Spirit by sacrificing the little finger on his left hand.

Of almost equal cruelty is the Pangwe custom of torturing the



INITIATION CANDIDATES, PAINTED WHITE,
PLAYING WARNING XYLOPHONE

Pangwe, West Africa

After G. Tessmann

secluded candidates by exposing them to the sting of especially vicious ants—two hundred nests of which have been brought to the lodge—and to the blister-raising hairs of poisonous pods. This too is accompanied by the shouting of “We kill you!”—whereupon the candidates start their period of seclusion, naked, their bodies painted the white colour of death. Their sex organs concealed by small, feather-trimmed covers, they play a special kind of xylophone to shun away all possible human witnesses. When they finally emerge as accepted men their bodies are painted red to signify the joy of resurrection and the vigour of life.

Boundless indeed is the imagination that creates such means of torture. Among these are the Nilotic Nuer custom of incising the

candidates' foreheads from one ear to another ; the piercing of their *membra* with sharp leaves of grass and whipping with thorny shrubs, both customary among the Nor-Papua of New Guinea ; and the very widespread practice of circumcision or incision at this age, which some scholars interpret as a ' symbolic castration ' and which, in turn, means nothing else but another form of temporary death.

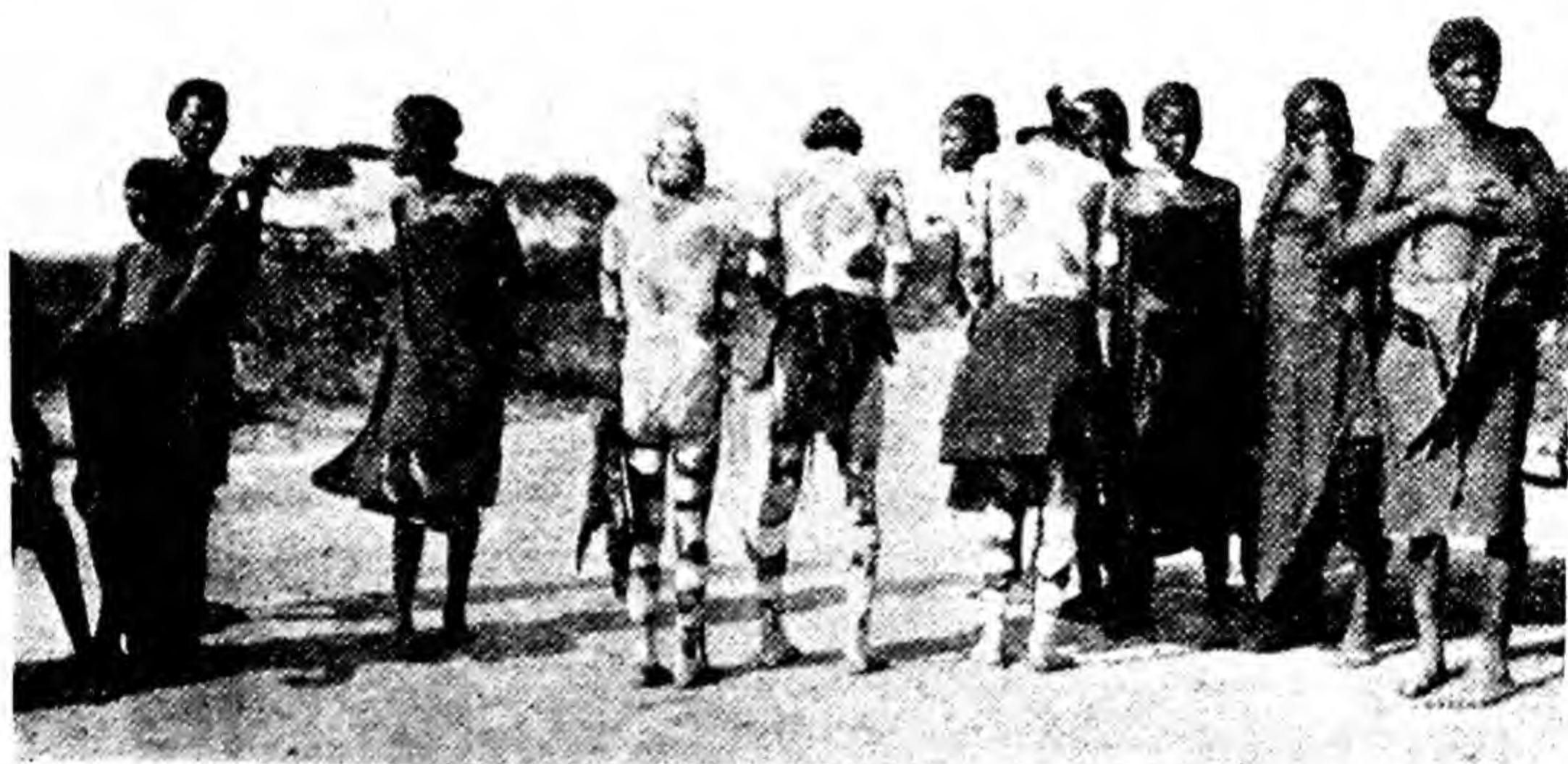
After the graduation the young man feels indeed like another person. The continuous fasting, learning, suffering, the shattering of his childhood world by the revelation of the mystical tribal secrets, and the feeling of having survived the tests and tortures provide him with a feeling of pride in his manhood that will never leave him for the rest of his life. In the light of this pride he will raise his son and he will do all he can to provide him with the necessary training to make him ready for the most important experience to come : his initiation.

There exists, as we see, no evidence of co-education among primitive peoples. The rigid nature of the tests, the entirely different branches of knowledge usually offered to boys and to girls, the sexual rules, and, most of all, the magic implications of the curriculum of the jungle college do not allow a mixed attendance. Both sexes have their lifelong-kept secrets which are the very essence of tribal power ; and these secrets require strict isolation of the males and females during the soul- and body-shaping initiation rites.

Since the advent of mental maturity in girls is paralleled by a clearly defined physical event the first menstruation is chosen by many tribes as the signal to acknowledge their coming of age. A principal custom known all over the world is the seclusion of girls, as well as of married or single women, in small isolated huts, where they have to take care of themselves in complete retirement during their regular monthly periods. They eat from special dishes, using separate tools and gadgets (which are often burned after use), and emerge, when the days of seclusion are over, after a bath of purification and in new clothing—all of which may also signify a long sequence of symbolical deaths and resurrections which last as long as their years of fitness. Strictest isolation from the male sex during this period is not only a custom but a sacred law, and any violation would bring sickness or death to the offender and to the community as a whole.

The first such event is regarded as a joyous one, and many tribes, especially in Africa, celebrate it with song and dance, like the Kpando of Togo who honoured a girl by the name of Dzodzeafefoe with this ditty :

Fresh vegetable! Fresh vegetable! Dzodzeafefoe celebrates her puberty. I went to see her. Her father is wealthy, and so is her mother. A chicken had to die—they cooked it for her. And ocropulp was prepared—all in her honour!



TRIBAL INITIATION OF GIRLS

Vanyemba Tribe, Ngongo, Central Angola
Field Museum of Natural History, Chicago

In New Guinea a girl's first menstruation is an occasion for showering her with gifts like a new loin-cloth, bracelets, and necklaces made of precious dog-teeth. Before receiving these presents, however, the girl has to undergo lengthy courses in 'civics' and 'home economics,' culminating in the painful incision

of the holy moon-symbol in her breasts and a ceremony at the lagoon. There, the candidates have to lie down in the shallow water while the old women walk over their outstretched bodies. The 'theoretical' courses given at these occasions may require a month or more, as among the Mbayá Indians of Paraguay, where the mother acts as teacher after her daughter's first sign of physical maturity. Proper notice is taken of the event among most North American Indian tribes, too. Among the Apache, the girls' initiation rites are more elaborate than the boys'. After being pursued by her tribal sisters, the candidate has to endure a beating and a stiff examination, after which she has to dance on a new blanket to the sound of a drum, chased by clowns and demons.

With the rising importance of feminine influence in the agricultural mother-right cultures, this milestone in a girl's life—the reaching of maturity—assumed much larger proportions than was the case in older societies. West Africa especially is the home of most elaborate puberty rites for girls. Their initial stay in the 'college' of preparation for adult life can grow into a permanent attachment to the established women's secret societies which, on occasion, may take the law into their own hands to discipline and terrorize the male population of the region. The more powerful such feminine organizations are, the more rigid are the preparatory initiations.

In the Jevhe 'finishing schools' of the Gold Coast and the Slave Coast the entering novice begins the courses with the shaving off of all body hairs. After a cold bath her entire skin is rubbed with a ceremonial oil. She discards her former clothing to receive a special garb of white cotton furnished by the priest. As another symbol of the 'death' of her former existence, she is obliged to assume a new name (the use of the old would result in severe punishment).

She even has to study and to adopt a new language (*Agbuigbe*, the secret tongue of all club members), and to learn a new set of rules of etiquette. Greeting her superiors, she has to fall down on her knees, clapping her hands in a special quaint rhythm. Older women give her daily singing lessons, and she is taught the finer points of spinning, and of the weaving of mats and baskets, until finally she is ready for the knowledge of the composition of secret poisons. The stated aim of the rigid training is to kill all natural feelings of the girl. Only when the highest degree of self-control seems to have been reached is she allowed to leave the place of confinement on short trips to provide the Jevhe household with water and firewood. Should she, in the course of these duties,

accidentally come across a member of her own family, she has to treat him as a complete stranger.

All this is accompanied by threats and by cruel punishment. When the Jevhe authorities do finally regard her as 'the finished product' she is allowed to leave the society and to return home as a new woman. This great event of the graduation, termed the *dede le Jevhe me* (dismissal from the Jevhe) or *dede ami me* (dismissal from the oil), is performed by the priest who dedicates her to the new life with the blood of a freshly killed chicken and returns her to her parents, adorned with colourful flowers and feathers. At home she is received with great joy. But for four more months she is not allowed to speak her native language, the Jevhe, but has to keep on using the secret *Agbuigbe* exclusively.

Although her stay at the 'college' of the secret society is merely a temporary one, the fact that she becomes one of the enlightened remains with her for the rest of her life. The influence of this relationship may go even further: she may desire to become one of the 'professionals.' In this case, she returns and has to undergo tests, which may gain her an influential post in the inner circle of the secret society. Even if she leaves the league to marry, she can at all times appeal to the society to defend her rights if, for instance, there should be some marital trouble. She always can find a ready asylum on the premises of the society, whose authorities will take her side and force her husband to pay a substantial ransom if he insists upon her return.

These 'colleges' existed and will continue to exist long after the 'finishing course' is over. By the continued protection they offer to their alumnæ they increase the women's influence at home and within the community to a considerable degree. Hundreds of such women's secret societies exist all over Africa, like the Niengo Society of Southern Cameroons (a word meaning 'water-nymph'), the Lesimu of the Bakoko, and the Sandi of the Vey. Most of the women members of these societies are entitled to hide their identity while in office by wearing a special type of black wooden mask with a carved coiffure of characteristically arranged coils. A whole set of costumes and cosmetic tricks go with this outfit to accentuate the wearer's 'supernatural powers.'

Among the best known of these secret societies is the Bundu Club of Mendiland (Nigeria), which acknowledges three degrees of graduation: the novice, or serving *digba*, who also acts as an assistant at the religious ceremonies; the *normeh*, or Bundu she-devil, who executes the decrees of the highest woman official, the *soweh*. While the *digba* is merely a freshman student, the rest of

the women assume the authority of a regular Vehmic court. All marks of identity hidden under their armour-like black garments, hands and faces covered with white grease-paint, the carved black mask all over their head, they discipline and at times even kill any male adventurer who dares to approach the secret lodge. He is rendered numb by the power radiating from the *soweh's* 'magic' personality. The trespasser who refuses to pay a fine may be sold abroad as a slave or may be immediately put to death if the *soweh* should silently point at him with a magic wand.

This type of education certainly leaves its mark on the mind of the *digba* long after graduation. It leads to an extreme development of feminine authority which, in turn, has created a counteraction by

the men, who also organize into secret societies for the purpose of avoiding the presence of the no longer weaker sex. They take care to instruct the boys properly in these colleges, so that they may be prepared to face the hazards of their adult years. Also, these educational institutions have developed into regular clubs, to which any alumnus is always welcome.

The many political, educational, and social powers assumed by these 'colleges,' clubs, and societies were finally reduced in the high cultures with their specialized institutions. The state took over the executive powers, while the priests led the instruction of the young men and women into the more conservative channels of religion. Losing their complex character, the secret societies were dispersed according to the different elements that composed them. Their remnants to-day are university 'fraternities' and 'sororities' and the countless clubs and leagues throughout the world.

The educational institutions of the high-cultured peoples of the past do not differ much from our own, although their wealth of



MASK OF A
BUNDU NOVICE

West Africa

Museum of
Ethnology, Cologne



BUNDU SHE-DEVIL

West Africa

Museum of
Ethnology, Cologne

subjects, their closely interwoven relationship to religious conceptions, and their much more intensive methods of instruction provided a more solid background than most modern endeavours can achieve. In the communities of the Incas, Aztecs, and Egyptians, in the profound views of the mystical teachings of Islam, Buddhism, and Lamaism, education could remain on a very high level because it was a privilege of classes and castes. The modern urge to make money on graduation from school did not exist in the small group of the wealthy who took care to keep the rest of their population in complete ignorance. At the time of Itzcouatl, the fourth king of Mexico, who ruled from 1427 to 1440, a large amount of sacred *codici* were publicly burned because "too many copies" had been made and it was deemed dangerous that "too many people, especially the serfs," get acquainted with the "black and the red" (the latter being a flowery description of the black and red scriptures of the *codices*).

Thus, knowledge of the written word and the invention of script, though beneficial to a few, was not a blessing for all. In the ages before the invention of printing knowledge was treated as the privilege of a limited class that disdained the 'ignoramus' and kept them away from the knowledge laid down in carved stone, in the guarded papyri or, later, on the daintily illuminated mediæval books of raw hide. The Tibetan Secret Book of the Dead contains the ancient Lama warning to hide its mysteries from the people because, "What good can come from the common man?"

What a contrast to the perfectly balanced education of the 'equal start,' the thoroughly democratic instruction methods of primitive man! What one man wants is the knowledge of all—and the wisdom of the entire community is at the disposal of every single member of the tribe. The development of classes in the high cultures destroyed this ideal approach. Education became a privilege of the wealthy. There was no longer one undivided force of public opinion—each class and caste had its own standard of thought, of knowledge, and of etiquette; and the young citizens grew up to be different from each other, not to resemble the tradition-sanctioned common ideal.

This social injustice of the educational approach in the high cultures, this development of a small group of the educated and a large majority of the ignorant, benefited that small and pampered group with an education of very high quality. The excellent schooling was skilfully furthered by the family in a home full of servants. These parents could afford to prepare their children wisely for their future positions of leadership.

This does not mean that this education was not strict and rigid. On the contrary, corporal punishment and mortification of the flesh were very important items in the curriculum as reminders of the earlier initiation rites. In honour of the gods, children and their families pierced their tongues with thorns, cut their ears, and indulged in all kinds of self-inflicted torture, as the Aztec word for midnight, *netetequitpan* ('the time when one practises self-castigation'), implies. Aztec parents considered lying the worst offence. The lips of an untruthful child were pierced with thorns, unruly boys were whipped with stinging nettles, and the girls who liked to spend too much time away from home got their feet shackled. The ethical teachings given by parents to their offspring were on a very high level. They might, indeed, provide some interesting comparisons and contrasts to our own educational principles.

Among the long series of instructions given by ancient Mexican fathers to their sons were the admonitions :

Honour all who are older than you. Do never blame a man for making a mistake—you may be the next one to commit an error. If some one talks to you—listen to him attentively. Never precede an older person if you can possibly avoid it. At table, never eat and drink before them, but wait with poise. If you receive a substantial gift, be not vain about it ; if it is small, don't disregard it. Do not let wealth make you arrogant. Never speak an untruth. Do not indulge in slanderous talk. Sow no enmities. If you are entrusted with an office, do consider first that one might try to tempt you with the offer. Do not accept it readily, even if you are the best qualified candidate. Accept it only if they urge you—this gains you their esteem. By all this I try to fortify your heart. Don't refuse to accept it readily. Your life's happiness depends on it.

Similar were the mother's words to her daughter :

Never neglect your spinning and weaving, your sewing and your embroideries. Don't sleep too much, and don't recline too long in the shade. Relax in the fresh air. Over-sensitiveness creates idleness and other vices. Never show that you dislike some kind of occupation. If you cannot always fulfil your parents' wishes, excuse yourself politely. Do not be too proud of what you own ; the gods distribute their gifts according to their wisdom. Have no intercourse with disorderly, untruthful, and idle women. Do not show yourself too often in the streets and on the market-place. Such places can cause your ruin. If you visit your relatives, show yourself useful, take a spindle in your hands. That is all for to-day, my daughter ; may the gods bless you.

So prepared, the young girl could safely visit one of the two types

of school provided for her : the lyceum, where she attended the lessons while living at her parents' house, or the temple school, where she boarded under strict supervision, either temporarily, as in a finishing school, or, if she chose, for life as a priestess of the gods.

The education of the young Aztec men was infinitely more varied. At the age of twelve or thirteen the training of the sons of noble families was taken over by the priests in the priest-house, where the main subjects of instruction were, besides the religious rites, a rigid physical training, the science of astronomy, and their country's history. After graduation they were transferred to the sing-and-dance house—a most misleading name, for, far from being a place of amusement, it was the institution where the young man was moulded into a warrior.

The type of educational pattern varies only in details from that of the other high-culture peoples up to the Spartans, whose ideal of education was a rigid training in the virtues of sobriety and discipline.

It has taken many centuries to make higher education accessible to all. The printed book, the State schools, the professional teacher detached from a dominating priesthood—all contribute towards a realization of the modern ideal of "an equal chance for all," thus bringing back the principal aim of education to its original roots.

Nevertheless, although our forms of instruction are richer in variety of subjects, we are not always able to equal the efforts of early man in the development of spiritual resources. With our emphasis on vocational subjects, and the haste to make money forced on us by an imperfect social system, truly spiritual stimulation is only too often absent from the curriculum. Our 'rational' explanations of the phenomena of life and of nature deprive the modern human soul of many of the best impulses it possessed in earlier times.

Overcoming the 'superstitions' of the Stone Age, we have lost primitive man's intimate relationship with nature, his respect for his fellow human being and for members of the animal kingdom. It is by no means certain that our 'facts and figures' are improvements on early man's closeness to the innermost sources of history—his recognition and appreciation of the virtues, the destinies, and the deeds of those who walked and laboured before us on this earth.

CHAPTER ELEVEN

The Show begins

FROM EARLIEST TIMES men have regarded play-acting as one of the best forms of entertainment. To-day most primitive peoples possess a considerable repertoire of plays, ballets, and spectacles.

The following excerpt is no quotation from a programme of the Ballet Russe de Monte Carlo ; it is not meant as an introduction to the *bouffées*, the *grandes jetées*, and *ronds de jambe* of 'The Golden Cockerel.' It is nothing but part of the text of a show of the primitive Papua in the South Seas.

When To Marmaki, the hero, gave the sign to start all the birds, by twos, took their position for the dance. Far in the rear stood two owls, in front of them two crows, and in front of them two starlings. Before these stood a pair of white-tailed eagles, two hawks, two pigeons, two cuckoos, two dwarf parrots, and two cockatoos. Two noble parrots made up the first line.

The owls opened the dance, waltzing gracefully along the row toward the audience. As they passed the musicians with their drums the women said:

"Look at those two! Who ever could like them with their deep-set eyes, surrounded by ugly white fringe?"

And yet, they were the loveliest owls you could possibly think of!

As the crows danced along the line the women said:

"Dear, aren't they pitch-black? Who would care for them?"

But the two birds were really gorgeous crows! Now, the starlings came up and danced. The women, who couldn't be pleased with anything, whispered:

"How ugly they are with their yellow beaks and the few white spots on their feathers!" When the proud, white-tailed eagles started, the women gossiped:

"Who can stand their dirty yellowish colour?" And while the hawks danced every one could hear the women chatter:

"Look! They have white necks and reddish-brown feathers! Gracious! But they are ugly!" The neat little pigeons followed.

"Look at those white necks!" shouted the women. "What do they think they are doing? Who would want to have them?"

The cuckoos were the next couple. When they danced in front of the crowd the women mocked them:

"How unattractive you are with your speckled plumage! How could anybody like you?"

After that, the cockatoos and the dwarf parrots went through their paces. But the women went on to belittle the graceful movements of the birds, and ridiculed the bright colour of their feathers. The only pleasure they really enjoyed was their own malicious gossip.

At the end came the dance of the noble parrots; and the women continued to pour abuse also upon their heads. But as soon as they lifted their wings their purple-lined undersides were displayed. This colour was so beautiful that the women instantly forgot their mockery. The purple feathers sparkled like precious stones in the sun, and whoever saw them wanted to touch them, to make sure they were real. The women threw away their drums, ran out of their row, and tried to cling to these noble dancers. This frightened the birds. With one single wild roar they all unfolded their wings and rose into the air.

This text contains all the elements of a real show among primitive people—dance, masks, music, and score. It demonstrates their deep artistic feeling, their æsthetic alertness to the effects of the theatre, their unusual sense of characterization, of colour, and of individuality. It has a pointed dialogue and a purpose; it also shows how the spectators participate in the play.

Despite an evolution through the millenniums, despite the stage tricks of modern super-technique, despite the play-bills quoting scores of 'back-stage' assistants, neither the theatre in general nor the drama in particular has changed in its essential concepts and methods of expression. All fundamental requirements of the modern stage prevailed in its earliest primitive beginnings.

When a sudden impulse of artistic curiosity to know more about the earliest roots of the theatre leads us to the voluminous library dealing with the history of the stage and the drama we may find ourselves introduced to its ancient manifestations in the mediæval



MASK 'BUSLA-MATLA'

Indians of the American
North-west Coast

Museum of Ethnology, Cologne

mystery plays and, further back, to the Attic tragedies and their forerunners, the chorus of the satyrs' play. At this point, recorded history of the theatre usually stops, leaving man's first theatrical endeavours hidden in the dawn and dust of the unknown.

This much we are told: that classical Greece featured two types of play, different from each other in mood and content and yet appearing intermingled throughout: the sacred, classical drama of pompous style, and the entertaining, satirical comedy based on burlesque improvisations—the mime (*mimos*). As an intermezzo, or prologue, or afterpiece, the *mimos* penetrated and interrupted the sombre flow of the great tragedies, furnishing a spell of relief from the high-strung declamations. Its form of witty comedy, with its persiflages on everyday events and its satire upon the leading citizens of the day, reached high literary perfection with such authors as Herondas of Greece (third century B.C.)—some of whose writings are preserved on a papyrus scroll in the British Museum—and Decimus Laberius of Rome, who counted Cæsar among his admirers.

This classical inheritance of theatrical tragedy and comedy was revived in France during the Middle Ages when Christian brotherhoods, like the actors of the *Confrérie de la Passion*, performed their religious mystery plays, while their worldly colleagues, the 'unworried children,' or *enfants sans souci*, performed humorous-profane entertainment. Later, in England, both trends were represented by the choirboys of the Royal Chapel and the strolling players—again the elements of seriousness and of joy. Like a red thread, the influence of the Attic *mimos* goes through the immortal plays of literature, from Shakespeare's jesters and clowns to Molière's witty valets and Goethe's *Walpurgis Night's* witches—all these are great-grandchildren of the ancient jokers, always intermingled with the serious characters of the drama. They accentuate by contrast the two elements of the theatre: tragedy and comedy. When the Church declared that the historical gay demons were devils, when religious taboos forbade, especially in Mohammedan countries, all theatrical performances, the silhouettes of the shadow plays of Java and Turkey took up the old tradition to still humanity's craving for light entertainment by offerings of burlesque plays in the spirit of the *mimos*; our Punch-and-Judy shows are nothing else.

But from where did the Greeks inherit their satyr plays? Whence originated the witty satirist who leaped on light soles among the buskins of tragedy? How about the origins of the drama as such? What were the first plays like? What were their

subjects and their stage? Who sat in the audiences, and who were the stars? The answers can, indeed, be found only when we study and compare the plays and performances of primitive cultures. To-day we find ourselves able to trace back the Greek *mimos* and the modern theatre to their inception.

As a result of his comparison of the Mexican with the Greek



ANCIENT FERTILITY MASKS

Fumbam, West Africa

Photo Museum of Ethnology, Cologne

drama, Preuss has found that both go back in their origin to the fertility demons of the phallic ceremonies of primitive man. The earliest forms of the *mimos*, as it was later called, were not necessarily characterized as lowly, burlesque buffooneries. This element was merely represented by the clown or jester alone. The dances in honour of Dionysus and the mumblings of the chorus of the Attic comedy stand on the same level as the costumed demons of vegetation that appeared in large numbers at the religious feasts of ancient Mexico for the purpose of invigorating the renewal of the gifts of the plant kingdom. However, in the high cultures of which the Mexican was a part the connexion between the *mimos* and the religious play was already so strong

that the demonic origin of the *mimos* deteriorated to the mere satirical, grotesque element, even to obscene burlesque of a purely entertaining nature.

Originally the phallic fertility ceremonies were considered



DANCING WITCH DOCTORS,
WEARING ANIMAL MASKS

From the Stone Age Cave,
Trois Frères, Ariège, France

After Bégouin-Breuil

necessary to bring about nature's cycles of renewal, to obtain rain and therewith the fertility of the fields, and to force the gods of vegetation to produce the fruits of agriculture. The 'death' and subsequent resurrection of nature were celebrated in these feasts of the high cultures of the Old and the New Worlds. Osiris, Adonis, Tammuz, Attis, Demeter, and Dionysus are nothing but the names of the fertility gods whose death and resurrection were celebrated. The actors impersonating these gods in their pantomimic dances performed the plays for the purpose of promoting the fertility of the fields and of the hunted or domesticated animals. These mimic dances are the beginnings of the drama.

Mimic dances, however, are very old ; in fact, they are as old as mankind itself. In the caves of the later Palæolithic Age we find paintings on the walls showing fertility dances directed at the multiplication of the prey animals like bison,

boar, bear, and deer. The drawings are done in very naturalistic style, the actor being the witch doctor or the magician of the tribe, wearing different masks representing the game animals.

The performances of the most primitive tribes who to-day still represent the cultural level of Palæolithic man like, for instance, the Australians, the Veddas, the Fuegians, and the Bushmen, have similar mimic dances to increase the number of

the gathered plants and the hunting animals. The communion with the powers which are responsible for the most important food of the tribe is symbolically performed by theatrical means.

The actor studies most attentively the bearing of the animal, its manner of jumping, hopping, moving around. Explorers who saw, for instance, the kangaroo dance of the Australians express unanimous admiration for the great mimic abilities of the performers.

In addition to these fertility plays, these ancient tribes also perform historic shows such as those dealing with stories of the migration of the ancestors based on age-old traditions. The number of actors varies. Friends and relatives of the actors adorn them with multicoloured paints and feathers which serve as masks. Another group of Australian plays performed in symbolic and mimic dances has as its subjects death and resurrection, love and jealousy, friendship and enmity. There is no mimic dance without a leading theme.

While these plays are still connected in some way with a serious or cultic idea, another group of shows and dances is dedicated merely to sheer mimic entertainment. It may be termed a dance opera. This type of play has nothing whatsoever to do with the religious cult, although it is equally old. These shows furnish æsthetic satisfaction and sensual excitement, distinctly different from the religious awe of the rituals. Best known among them are the Australian corroborees.

The occasions for performing a corroboree are numerous. Corroborees are held when an important wild-growing fruit is ripe, before leaving for war, after a happy hunt, during meetings with a neighbourly tribe, and especially as an assurance of peace between different tribes and as a corroboration of a concluded peace treaty.

In contrast to the traditional alternating songs and texts of the cultic rites, the words sung or spoken during the corroborees are improvised and witty. Any merry idea is turned into a jocose remark or gesture; and whim is followed and expressed



DANCE MASK

Melanesia

*Museum of
Ethnography, Cologne*

in strange caprice, to be repeated in chorus by the delighted audience.

Despite its loosely knit structure, each such Australian play has its carefully prepared climaxes: the painted actors appear and vanish effectively in the dim light of the moon, with an invisible orchestra of percussion instruments stirring the nerves of the onlookers. All the joys and poetic thrills of the show come to the Australians with these corroborees, which are sometimes of great artistic fascination.

But it was not from the purely entertaining shows that the *mimos* and eventually the modern drama developed; it was from the cultic-religious performances. Evidence of the beginnings of the *mimos* is discernible in the oldest cultures.

When the long sequences of the religious plays begin to weigh too heavily on the souls of the audience the desire for a spell of relief brings into being a dramatic character created to carry away the awe of holy magic by his sudden and burlesque appearance, to bring laughter back to man and to accentuate by contrast the sincerity of the ritual drama. He is the man of the merry pranks, the hero of joy, the great-great-great-grandfather of the scintillating actors of the *mimos*, of the jesters and the clowns. Not shackled by any chains of censorship, he leaps around the demonic actors of the sacred plays in merry intermediate scenes of hilarious improvisation.

The old men in their 'box' seats in the Australian bush lose their dignity when this painted, feathered clown appears. Watching his antics, their eyes moisten from excessive laughter, and they claim that their "belly is torn from emotions," rightly recognizing their diaphragm as the seat of joy.

Not only are the doings of men burlesqued at these occasions, but also the characteristic habits of the animals. In the Tasmanian Kangaroo dance the clumsy jumps of the pouch bearers are perfectly imitated; an emu ballet copies the stiff movements of the bird's head while feeding; a white man's horse and buggy, complete with bridle and whip, trots along the stage, with the dancers nodding like horses and neighing appropriately.

This clownish element of entertainment intrudes even on the otherwise very serious initiation ceremonies to offer a breathing spell to the harassed candidates. One such grotesque interlude is the seal dance of the Yagan of Tierra del Fuego, in which the cowering men swing their torsos back and forth to the rhythm of song. The way in which they shuffle in seal fashion, scratching

breasts and arms with their 'flippers,' and grunt at each other between occasional hoarse barks, is side-splitting for the hunting experts in the audience. Riots of applause reward the accomplished actors. Equally excellent is their imitation of the sea-bird Karapu. Its slow approach, the clipping and lowering of the wings, the characteristic cry, culminate in a sudden 'landing of the flock' of such naturalistic accuracy that even white observers are fascinated. A favourite scene of two Yagan clowns is the struggle of two vultures for a piece of meat; this, too, raises gales of laughter.

The very good time enjoyed in the 'theatre' by peoples even of the most primitive cultures shows that the deepest roots of theatrical effect have nothing to do with complicated stage mechanisms, individual 'stars,' or fashionable playwrights. Imagination is the magic cue. Where it fails, the 'flop' is born; where it excels, the stage is a world of miracles.

So far we have only discussed the plays and performances of the oldest cultures, of peoples who from the economic point of view belong to the acquisitive form of economy. With the development of agriculture, and the domestication of animals, man became more dependent on the mystical powers that cause rain or drought, a bad harvest or a good one, or the sickness or health of the animals. Thus the very essence of the life of the agriculturist depends on his effort to appease the powers which control his food supply by imploring them through performances and dances to grant their help and co-operation.

Often we speak of the culture of the simpler farming societies, especially those in Africa and the South Seas, as the Culture of the Masks, an indication that the mask worn during their rites and performances is the all-important factor in their lives. In the mask performances the mask is the hero of the play, not the person who wears it. The mask is the character it represents, not its likeness. The mask is actually the spirit of the dead, the ancestor, the animal, and this conception contributes to the awe the play inspires.

In addition to religious plays, mask performances are given for general entertainment. These plays deal with daily events, history, and mythology. An amusing example of this type is found in the *dukwalli* plays of the Makah Indians. The Makah believe that every creature on earth was once human, and that accident, neglect, or misdeed transformed it into its present shape. The nature of these 'accidents' is the substance of the *dukwalli* plays. The masks are equipped with little trap doors which are opened during the climaxes of the performance to expose the eyes,

the mouth, or the nose of the actors to the surprised audience. This same trick is used by the Eskimo to frighten or amuse the onlookers at unexpected moments. The spectators' reaction is exactly as in our theatres: applause rewards the successful play, and results in its 'long run'; if it does not gain the public favour it is received with hisses, and vanishes from the play-bill.



DANCE OF THE GRIZZLY BEARS

Sioux Indians

After G. Catlin

Apart from these purely entertaining shows, the numerous religious cult dances and cult plays of the agricultural peoples stress the serious religious masks of the fertility demons. The art of the actors is mainly directed towards the perfection of the solemn religious play. The purpose of such performances is to remind actors and spectators alike of the innermost object of the play: the utilization of the existing magic powers of the unknown for the earthly welfare of the tribe. But the religious plays that sometimes go on for weeks are occasionally interrupted by a humour-studded, profane interlude which interests and amuses the spectators much more than the lengthy, drawn-out cultic ceremonies. Among the Pueblo, the Mandan, and Iroquois,

such alternating performances of cultic plays and entertaining interludes are especially typical.

The ritual of the Zuñi, a Pueblo tribe, calls for six major ceremonies of which the Katsina cult is the most important.



PAUTIWA, THE SUN-GOD, DESCENDING TO
SUMMON THE KATCINAS

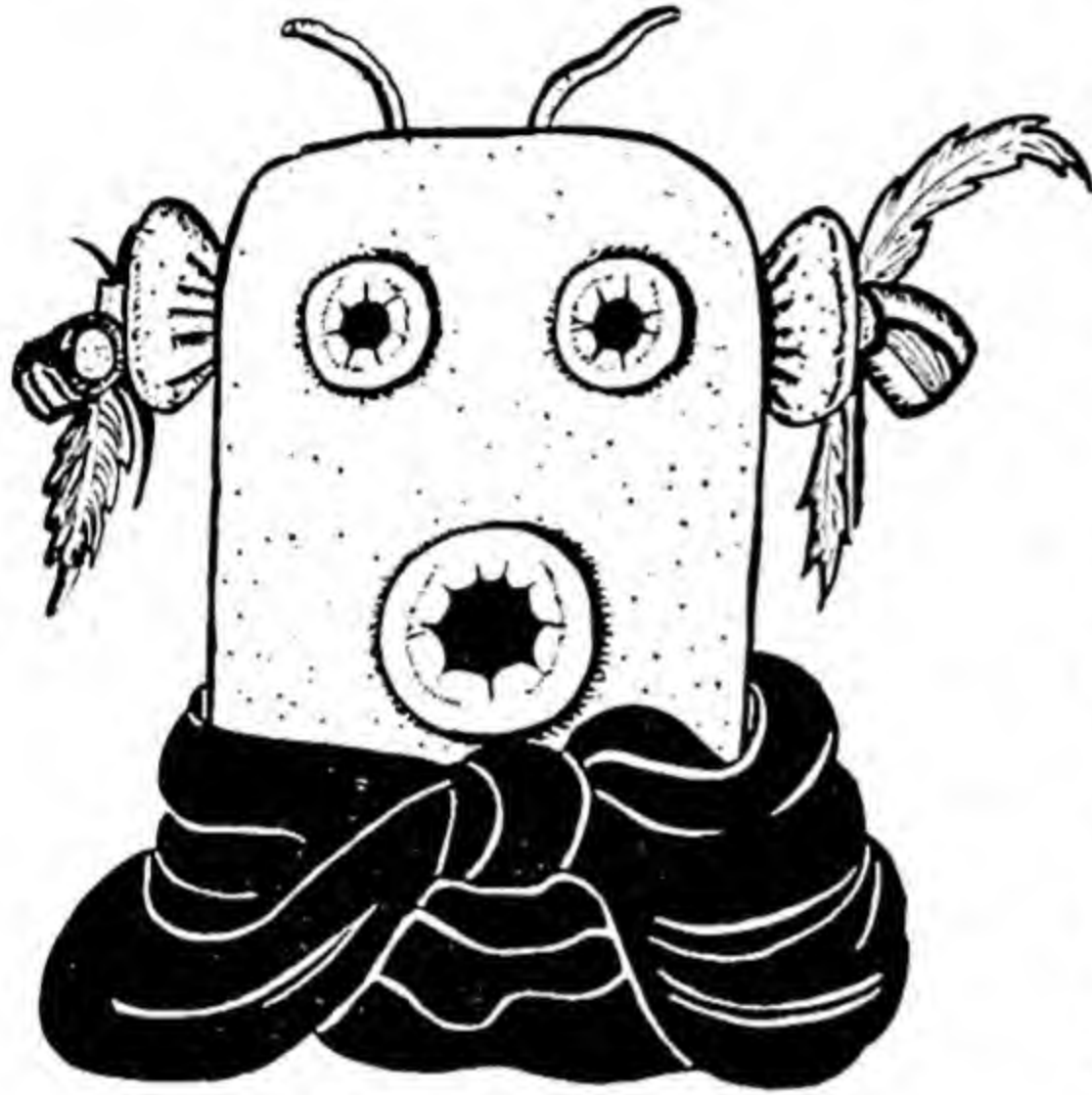
Pueblo Indians

After J. W. Fewkes

By "Katsinas" they mean supernatural beings symbolized by pictures and masks. Each of these masks has its own distinct individual characteristics, and is so clearly the image of the god it represents that, to the Zuñi, it is identical with the supernatural being itself. All of the many masks are worn in worship of the *koko*, or rain gods, who are so powerful that humans must die at their sight. To protect their friends from this fate, reports Bunzel, the *koko* "authorized masked dances, and promised to come and stand before them" in the shape of rain. All men

of the community are members of the Katcina Society. They wear the gorgeous ancient masks, one hundred and fifteen of which are known by name and are individually distinguished by the details of their costumes.

Another ceremony of the Pueblo group, the Pamürty festival of the Hopi Indians, begins with an impersonation of Pautiwa, the sun god, whose mask is decorated with rain symbols. He is the inaugurator of the whole ceremony, announcing the play and



KOYEMCI MASK

Pueblo Indians

After J. W. Fewkes

making the rounds among all fellow-performers. The other individually identified masks include the fire god, the hawk and the grey falcon, the duck and the eagle. The players of these characters assemble at a distance from the village, where they don their costumes and, led by Pautiwa, file in closed procession towards the scene of the play. Reaching the stage just before twilight, they make a striking picture in the waning rays of the sun. The wearers of the bird masks show off their multi-coloured feathers and move their arms up and down to create the impression of wings. Other

masks begin to sing under their knobbed helmets, and shake their rattles; the play begins. There are altars before which food is offered to the Katcinas; painted screens serve as backgrounds, and the floor of the stage is often decorated with colourful sand ornaments.

Very large numbers of Katcinas appear also at another occasion, during the Powamû festival of the bean-planting, which symbolically re-enacts the rebirth and purification of the earth, with the 'return of the Katcinas' as its principal theme. This ceremony is interrupted by the appearance of the Koyemci, the profane actors of the interlude. The Katcina ceremonies call for ten Koyemci, always appearing as a group, each of them individually named and equipped, although they can easily be distinguished from the other dancers by their scanty clothing. They follow their 'father,' a special leader chosen by the priests. Their bodies are painted pink, their faces hidden under knobbed masks which

are moulded with clay into grotesque features. Their only garment is a kilt of black cloth which they like to remove during the climaxes of their caprioles. Their genitals, which are tied in place with a cord, are exhibited freely, because "it is all right for the Koyemci to take off their covering," say the people; "they are just like children." This childish, unformed character is their mythological privilege. They follow the holy masks, burlesquing their movements, a practice which often leads to obscene extravagances. When they pass the houses the women pour water on them "to induce prompt rain." Although they are hilariously funny, they enjoy great respect. Cushing, an old author, says of them:

Silly were they, yet wise as the gods and the high priests; for as simpletons and the crazed speak the things seen of the instant, uttering belike wise words and prophecy, so spake they; and became the attendants and fosterers, yet the sages and interpreters of the ancient dance drama of the *ka-ka (koko)*. . . . Named are they not with names of men, but with names of mismeaning.

Wherever they appear, they provide for the gay side of entertainment. One of them may suddenly jump among the dancers to exclaim: "My wife made off with another man; this night I take a little trip myself!" Their talents as jugglers and conjurers are highly appreciated by the audience. For instance, they burn a feather and then, after a deep breath, produce it from their mouths, and make objects disappear and reappear to the delight of the onlookers.

Their assistants, the *wictcinas*, throw clay balls or mud at the bystanders; they shoot with tiny arrows to indicate the sting of bees, or use branches as their fools' bats, another attribute of the clown that survived through the ages. When these primitive clowns whip the public they 'take away the bad luck.'

To check the curiosity of the onlookers, the clown claims the fool's bat as his privilege among other tribes also, such as the Selish, the Nutlmatl, and the Navaho. The latter have the 'sword swallower,' who symbolically inserts a feather-trimmed stick in his throat.

In the Pueblo ceremonies the Koyemci alone are performing actors, while the wearers of the Katcina masks merely execute their solemn dances. These two types of mask wearer, the religious Katcinas on the one side and the profane Koyemci actors on the other, must be recognized as completely different characters. They never trespass on each other's domains, although both are naturally of religious, cultic origin.

The Koyemci are famed as gluttons, and love to collect edible



KATCINA MASK, FOLLOWED BY
KOYEMCIS

Pueblo Indians
After J. W. Fewkes

gifts. This fondness for food makes the rôle of Koyemci desirable to the poorer Indians, who cannot afford the costly outfits of the godlike masks, and this, in turn, diminishes the reputation of the Koyemci. An influential, well-to-do member of the tribe never desires to play the part of a Koyemci.

The profane interludes during the sun-dance festivals of the Prairie Indians parallel in many ways the performances of the Koyemci clowns. In the Okipa ceremony



OKIHEDE, THE BUFFALO DEMON, APPEARING
IN THE SPRING FESTIVAL

Mandan Indians
After G. Catlin

of the Mandan it is Okihede, the devil, who comes forth as the burlesque character. On his head he wears a cap trimmed with a black cock's comb. His face is hidden under a wooden mask with white rings around the eye openings and pieces of wick for teeth. A sun is painted on his stomach, a half-moon on his back. Wearing a bison tail, he runs wild in the prairies. Often the



MUKISH CLOWN
West Africa



MUKISH ON STILTS
Vatchivoke, West Africa
After H. Capello and R. Ivens

monster ransacks the village, searching all corners of the huts and asking for gifts. He also offers to remove vermin.

Africa, too, knows such a burlesque figure. It is the famous joker of the Congo Basin called the Mukish. He intrudes upon the solemn initiation ceremonies to ban imaginary bugbears. His speciality is conjuring tricks. He may appear on stilts on which he stalks about with great acrobatic skill. If he does not feel inclined to appear himself he may lend out his costume to somebody else. His main characteristics—versatility and Jack-of-all-trades abilities—are the same in all parts of the world wherever a gay improviser is needed for contrast to the serious parts of the play.

His characteristic fondness for food and culinary excesses has remained an ear-mark of the clown up to the high cultures, through the Middle Ages and later, as Gargantua and Falstaff prove. Often his very name is identical with the favourite food of his nation, be he the French Jean Chocolat, the German Hans Wurst, the English Jack Pudding, the Italian Maccharoni, the Dutch Pickleherring. His masks and attributes are as manifold as human imagination itself. Whether he is merely distinguished by paint and feather trimmings, as in Australia, or adorned with elaborate head-dresses and masks that are masterpieces of art, whether he uses mere branches or clay balls or complicated props like stilts and magic tricks, nobody can be in doubt that a gay interlude begins when he makes his appearance.

He may take the inspiration for his pranks even from the 'crazy' ideas of civilized man: Iroquois clowns imitate skaters or locomotives; New Guinean jesters, inspired by their experiences during the Second World War, jump as 'parachutists' from trees with grotesquely outstretched arms. The Hopi caricature of a scientist 'scribbling' data on a shred of 'paper' is masterly. In Africa the most applauded clowns, for instance of the Yoruba, are those who poke fun at the 'uncivilized' habits of the white man.

Among some Californian Indian tribes the office of clown, *hili'idac*, passes from father to son, which results in great professional pride. These peoples would hold no mourning ceremony, no ceremonial face-washing, without the clown's presence. The Apache, who cure their sick with holy dances, let special 'devil clowns' mingle with the divine *cheden* devils during the magic performances.

Likewise clowns appear even during the holy dances of Tibet among the symbol-laden Lamaist gods and devils, to arouse gales of laughter when they grotesquely imitate the ceremonious steps of the sacred dancers. In contrast to the gold-studded, skull-wearing gods, the clowns are clad in skeleton costumes with bones painted in the proper places. It is said that once they were ascetics so deeply absorbed in meditation that they did not notice a thief who stripped them of their skins. Since that time they are sworn enemies of all burglars, and are called upon to detect anyone guilty of theft, an ability which is ascribed also to the Koyemci.

In the people's conception, the clowns remain hilarious and foolish but also strangely enlightened creatures, destined to be laughed at, yet not to be ridiculed too much because, as the Zuñi

say, "the Koyemci are dangerous." Their genial art of improvisation has accompanied the clowns into their modern exile, the circus. They alone wear the loud paint of primitive days; they alone can take excessive liberties with dignified visitors. An occasional tragic touch or an extemporaneous line of deep wisdom reminds us of their ancient past as partners of the holy demons.

From the figure of the clown, his troupe, and their entertaining performances, developed the *mimos* of the high cultures of the Old and the New Worlds. The line of development leads from the mimic dances of the hunters and food gatherers to the fertility rites and phallic dances of the agriculturists, and from there to the high cultures, to culminate in the *mimos*, the people's theatre of the Hellenes, and the beginnings of the great world theatre, the theatre of our time.

As to the original figure of the clown as such, he was for a time the victim of the changing development. The true meaning of the clown as a contrasting counterpart to the holy demons, the gods of fertility, of rain, plants, and animals, somehow got lost, or, at least, became distorted and misunderstood in the ancient high cultures when the states' religions absorbed some of the older rituals to direct the souls of the 'pagan' worshippers into new channels for the benefit of the priests. The officially introduced mysteries and miracle plays overshadowed the original meaning of the fertility rites, whose elements were preserved only in isolated ceremonies as, for instance, in the Eleusinian mysteries of ancient Greece. The clown, that old survivor of the fertility rites, could no longer be understood in his rôle as the bringer of relief, the gay interrupter. He now stood for the entire complex of which he originally was just a part: he was mistaken for the phallic demon himself.

In the later course of the development of the show and the theatre, however, he regained his original purpose as a mere clown and jester. And just like the spectators at the ancient religious rites, our modern-drama audiences still long for an occasional streak of burlesque entertainment. Whenever the flow of the play becomes too tragic, too intellectual, the skilful playwright inserts a contrasting note of gaiety, whether that note is an outright clown or a picturesque idea of the stage director. Goethe featured trained poodles during intervals of his *Faust*; Lessing let rope-dancers provide the comedy element.

The importance of the producer was recognized in earliest times, whether he was the author himself directing the movements of his characters, or an appointed dance manager, as among the Zuñi and Hopi and most Californian tribes. He is regarded

as the 'big boss of the show' who may occasionally even act as a clown himself. In this disguise he will, for instance, criticize a bad chieftain. 'Talking crazy,' dancing backwards, he wields enough authority to induce the old men to get rid of an incompetent chief and to elect a new and better one.



STAGE SCREEN OF THE HOPI
INDIANS, DEPICTING ALOSAKA,
THE IDOL OF THE HORN
PRIESTS

After J. W. Fewkes

As for the stage, it was the wide open spaces in the beginning, but even tribes as primitive as the Fuegians calculate skilfully the effects of proper focus, and do not allow the audience a too close approach to the performers. From the special hut where the masks are kept developed the separately constructed dance house, as the Eskimo and many other tribes know it. The Pueblo and related societies perform their plays on an area distinctly designated for this purpose.

In the high cultures the market-place and the entrance halls to the temples became the *propylæum*; or the king's palace served as a dramatic auditorium. The theatre of the Aztecs, as Sahagun and Father Acosta describe it, "was a platform, square and uncovered, situated ordinarily in the centre of the market-place or at the foot of some pavilion. This platform was sufficiently raised to enable it to be seen from all sides by the spectators." In the *Relaciones* of Cortés we find a description of the

Aztec theatre of Tlaltelolco, which was "made of stone and lime, thirty feet high and thirty paces on a side." The 'stage entrance' is, even in the earliest cultures, reserved to the performers exclusively, and the injunction "Keep out!" stands clearly over the doors of make-believe, although there may actually be neither doors nor posters.

The masks may be the property of the actor; he may own his costume, or merely its design, or both, and when he refuses to take part he may stop the whole show if it so happens that no other tribesman is authorized to wear it. Sacred masks, especially,

are often the property of the entire tribe. They can be ordered from special craftsmen even of other tribes, as is the practice of the Makah, who have their finest costumes carved and fashioned by Nittinat Indian artists.

The Zuñi divide their Katcina masks into two groups: the 'Katcina priests' of ancient and permanent type, worn by the 'gods,' which are tribal property, and the 'dancing Katcinas,' used in group dances, which may be ordered by any Indian wealthy enough to afford them. The "Katcina priests" are, as Bunzel states, "treated with the utmost reverence. They are dangerous." Significantly enough, also, the Koyemci belong to the 'Katcina priest' masks. After the dance the mask is taken to its keeper's home. "It is wrapped in buckskin or in cloths to keep out the dirt, and is hung from the roof or placed in a jar. The dangerous ones are all kept in jars. The mask is never placed on the floor. The mask is fed at every meal. Some one will go into the mask room with some food and feed it to the mask." People say: "Go in and feed the grandfathers." These 'dangerous' priest Katcinas are supposedly gifts of the supernaturals themselves, and are "handed down through generations." They are all distinguished by their complete lack of any attempt at realism: their cloud symbols and animal or floral meanings can be properly 'read' only by the tribespeople, which makes their identification a science in itself. The theatre is one of the main subjects of instruction at the initiation ceremonies.

The property rights that regulate the ownership of masks involve also the texts and songs used; hence we may speak of a regular primitive copyright. The New Guinean *vaim nor* masks worn in Murik can be made only by the inhabitants of one specified village by the name of Djanein, as Schmidt relates: "All other villages have to order it from there; the mask *lauen* can only be made in Karau."

The same applies to the songs which are owned by clearly defined sibs exclusively. This strict copyright appears in the earliest cultures, for instance, on the north-west coast of Australia where, according to A. P. Elkin, "a particular chant is sung when the design is being engraved on a pearl-shell. The design cannot be made except by those who know the song"—in other words, by the 'owners' of the song. In the same region dances and songs are named after their inventors, and are safeguarded against any infringement by non-owners. The owner of a song may authorize a 'helper' to sing it with him, as is customary among the Kamia of south-eastern California. Their

songs are owned by men only, and their copyright goes back through the generations.

Songs may be sold or bequeathed, and they may be a regular source of royalties to be paid by anyone authorized by the owner to 'borrow' them. The idea that a text must be paid for by anyone who wants to use it is so strongly developed by the Zuñi that they could not conceive how the Christian missionaries, in their efforts at spreading the new religion, could give away the precious stories of the Bible 'free of charge.' When, among the Winnebago, an unauthorized person—and anyone except the author himself is unauthorized—tells a story he is considered a thief and a liar, and the story is 'wrong,' even if it follows the original word for word.

The theatre of primitive man is not without change, even if certain dances and songs belong to the permanent stock of the stage. Scenes are continually changed, shortened, or added. The repertoire is enlarged in many ways. Plays and dances of neighbourly tribes may be adopted, but they too are copyrighted, and the privilege to perform them has to be paid for. The right of performance is purchased from the owner, whether an individual or a whole tribe, and no producer from another tribe who may have memorized the course of action during a visit would dare to take the play into his own repertoire without having paid for it.

The most important factor in the theatre of primitive peoples, as well as in our own, is the audience—that means the entire tribe and often even other invited tribes from the neighbourhood. The aim of the performance is to please the masses. The theatre is everybody's business, its offerings concern every single member of the tribe, and as the concern of all it is truly an expression of the public mind. Entrance fees are unknown since there are neither producers who want to take money nor actors' salaries to pay. And, contrary to our custom by which the professional critic 'makes' or dooms a play, the audience itself expresses its opinion, unmistakably and inexorably.

Music almost invariably accompanies the shows of primitive man. All kinds of rattles, drums, flutes, sounding sticks, and assorted musical bows, harps, guitars, and trumpets serve to enhance the effect, even if the play itself is not musical in its nature.

In primitive music, however, the emphasis on rhythm is much more pronounced than in our culture; and this rhythm is much richer, more differentiated, and more complicated than found even in our symphonic music. Primitive skill in the interweaving

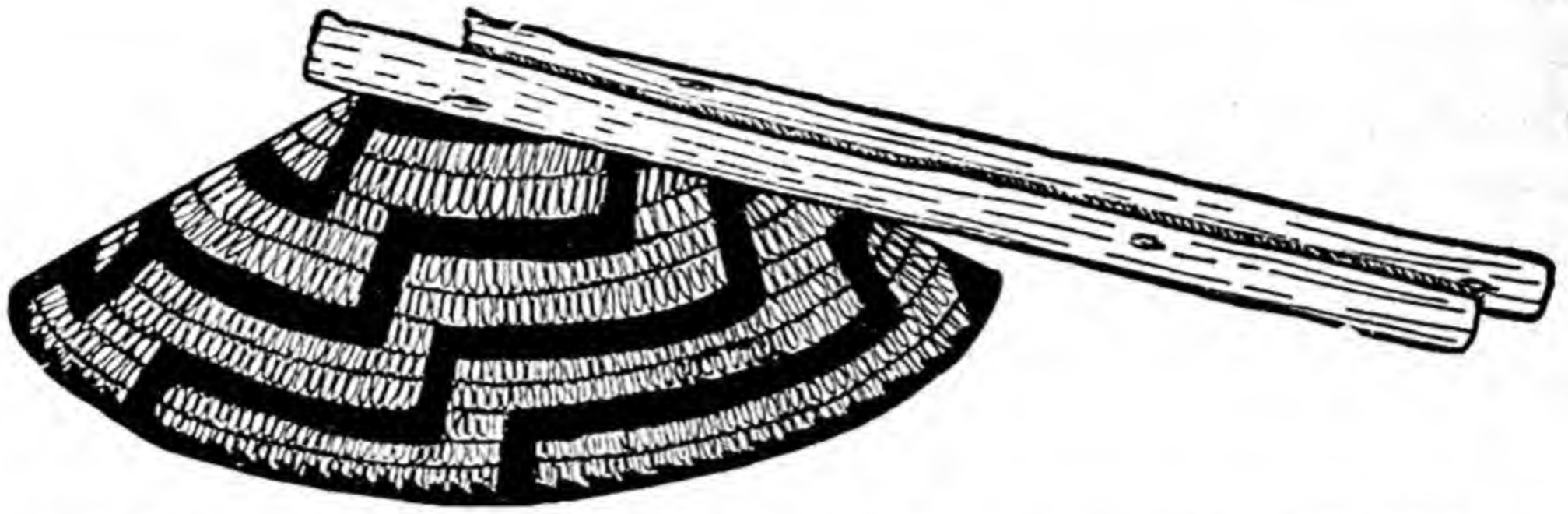
of different rhythmical themes is so great that it is impossible for us "to grasp the rhythmical complications of primitive music at a simple hearing," as Hornbostel puts it. Modern music, in its recent rebellion against an harmonic tradition, for centuries considered the highest possible musical scheme, is going in the direction of at least the simpler stages of the rhythmical perfection achieved by primitive peoples.

Primitive music is not harmonic-metrical like ours, but purely melodic-rhythmical. The idea of Democritus that man was first impelled to make music when he attempted to imitate the songs of birds may be partially right, as some such songs of aborigines actually prove, but musical art as such did not develop from such attempts. It was not the 'melodies' of the birds' songs that invited imitation, but merely its gay trills and clicks that were added to the 'human' melodies.

The earliest musical instrument was the human voice. In primitive songs it remains strictly homophonous, even if the occasional use of parallel octaves, necessitated by the different pitch of the singer's voice-registers, sometimes creates a polyphonic impression. The oldest 'opera scores' consist of a text sung by the chorus leader and a refrain of short motives, often senseless syllables rich in vowels, repeated by the chorus. When the leader's voice took the form of questions to which the other singers replied the alternating or dialogic song developed, to grow with the sound of the accompanying instruments into a regular opera libretto, even though the 'book of words' existed only in the memories of the performers.

Of the musical instruments which the manager of the primitive show has at his disposal four main groups have been characterized by Hornbostel: firm bodies, bent membranes, strings, and wind instruments. The 'firm bodies' are the percussion instruments, the simplest of which is the clap of human hands accompanying song and dance. In the oldest cultures, like the Australian, sound sticks, rattles, and additional rhythmic devices are used, at times in combination with primitive sounding boards like calabashes or hollow trees. Such sound sticks are used in pairs by the Papago Indians, who rasp them upward and downward and occasionally add to their range of sound by beating a simple, turned-over household basket with them. The same idea induces the primitive tribes of the Malaccan Peninsula to roll up their bast mats and beat them rhythmically with the sticks, which causes an explosive sound audible at long distances. Tubes of bamboo banged on the ground are equally effective Malaccan percussion instruments.

The realization that a hollowed-out wooden body can be used as



HOUSEHOLD BASKET USED AS DRUM, WITH COTTONWOOD
DRUMSTICKS

Yuma Indians

After F. Densmore

a producer of sound led to the invention of the wooden drum, whose manifold possibilities have provided the climax for many a dance, show, and 'supernatural' spectacle. Among the smaller rhythm beaters are the world-widely distributed family of rattles (fashioned of all imaginable materials, like gourds, deer-hooves, cocoons, split sticks, wood, pottery, iron and bronze) and bells, especially used in a West African instrument. From the sounding stick, suspended from a tree, a long line of evolution leads to the triangle and the cymbal of the high cultures.



AFRICAN DRUMMER

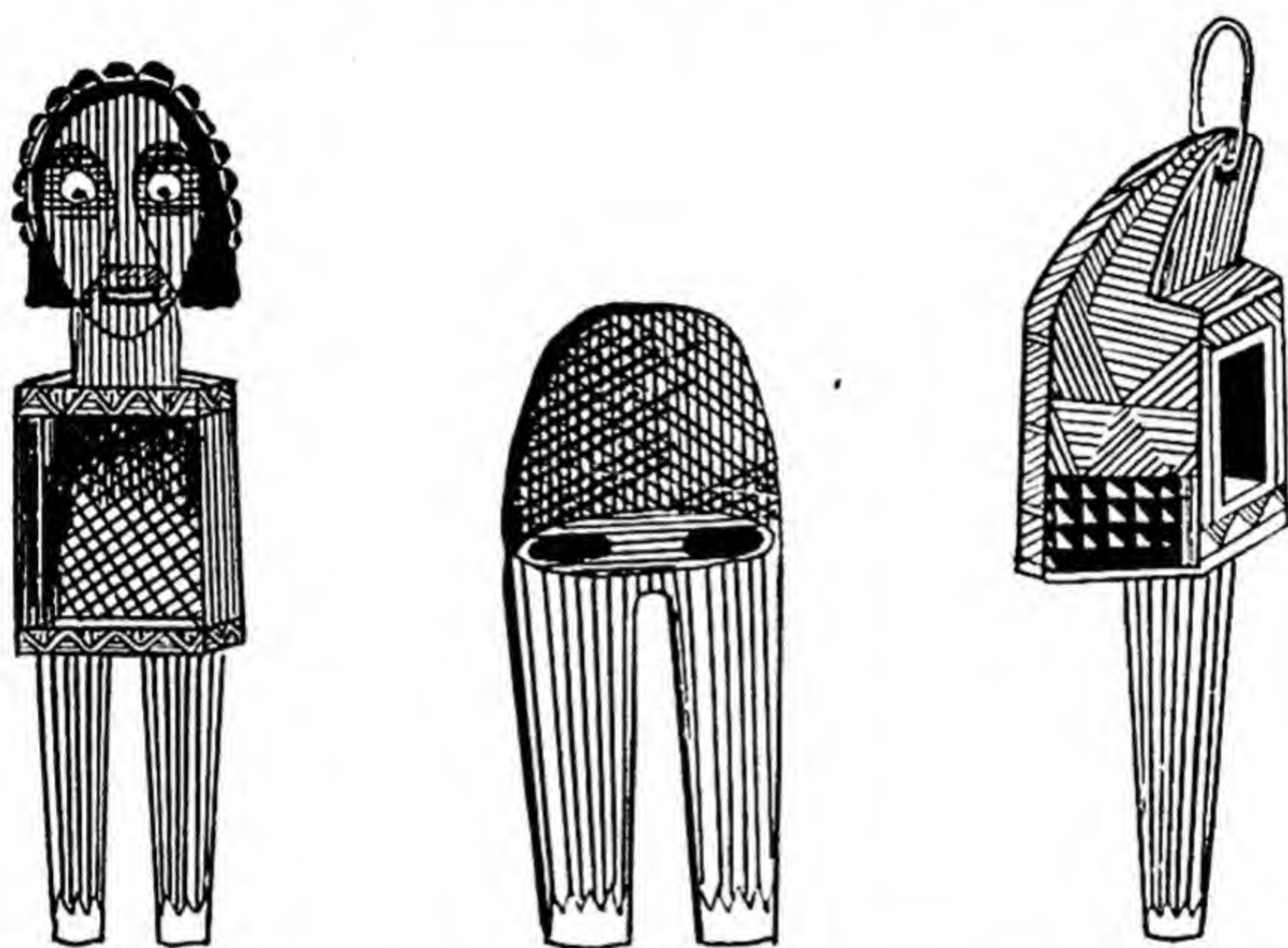
After Bernatzik

Bent membranes are used to create the sound - producing 'membranophones.' Their most ancient form is the bull roarer or *Waldteufel*, which plays an important rôle in the mystical religious ceremonies of Australia. No non-initiated person is ever allowed to see it. Its African parallel is the *mirliton*, used to change the sound and pitch of the human voice at equally sacred occasions. It masks the identity of the singer during the holy ceremonies, and its sight is strictly forbidden to

women and children. The modern kazoo, an instrument 'to be sung into,' is its later development. The most important instru-

ment of this group is the skin-covered drum, which can be found in all agricultural regions of the globe.

The sweet sound of the stringed instruments could add its lyrical touch to the shows of primitive man only after the invention of the bow from which it originates ; and the bow goes, as we know, back to man's oldest robot, the animal trap. The one-stringed musical bow, or monochord, is the oldest string instrument.



MIRLITONS, WITH MEMBRANES FASHIONED FROM SPIDER EGG
COVERS FOR THE TRANSFORMATION OF THE SOUND
OF THE HUMAN VOICE

Pangwe, West Africa

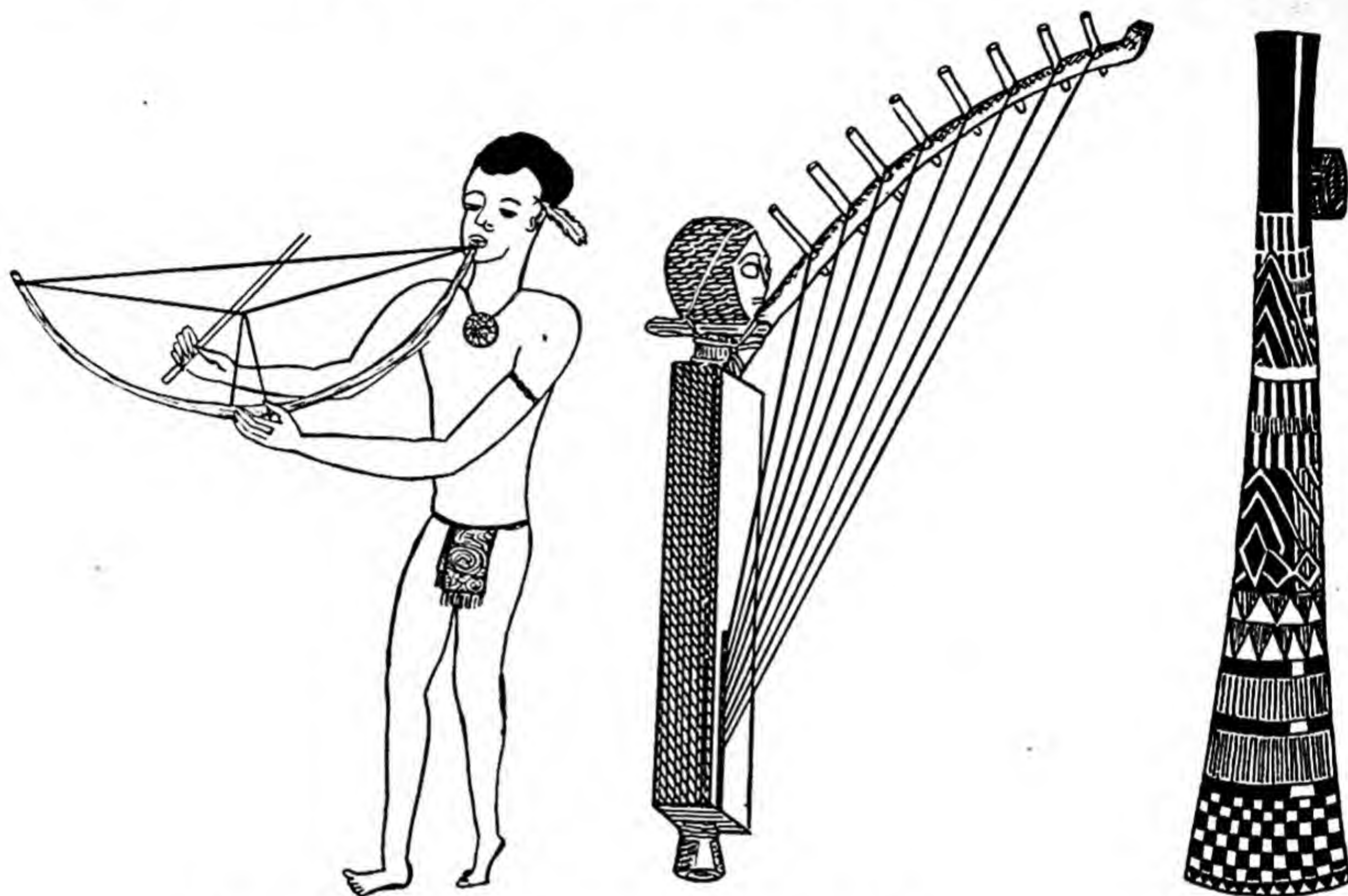
After G. Tessmann

By the addition of more strings and sounding boards it developed into the harp, the lute, the lyre, the cithara, the guitar, the violin, the 'cello, and their manifold variations.

Gentle and powerful is the sound of the wind instruments. From the twittering flute to the trumpet fanfare, the aerophones have been effectively used to underline the dramatic climaxes of the primitive play. From simple pipes or flutes forms of extreme diversity have developed, be it the "quill whistle made from a big feather cut like a cane pipe" or the scores of wooden, bamboo, and metal flutes and pipes manufactured from Africa to the South Seas. Malaccan natives like the sound of the wind or *æols* organ, an arrangement of pipes suspended from trees. A group of flutes strung together resulted in the invention of the

Pan pipe of all sizes, from a few inches to six and more feet, which is the basic form of our organ.

Africa and New Guinea especially abound in flutes. In New Guinea the sacred *brag* flute is the 'voice' of the holy *brag* spirit, while the mask is his 'face.' Nose flutes, mouth flutes, and cross flutes are the best known New Guinean forms. Africa



MUSIC BOW
Gazelle Peninsula

HARP

WOODEN
TRUMPET

Pangwe, West Africa
After G. Tessmann

knows them made of bamboo, wood, and iron; the last developed into trumpets. To render their shows more spectacular, native African princes keep at their courts fanfare corps of thirty and more musicians. Related to the trumpet is the horn, used in the form of an antelope horn in Africa and still preserved as the ram's horn of the Jewish Passover ceremony. The prehistoric European trumpet of about 1400 B.C. was the *lura*, cast in bronze, which played a dominant rôle in the Scandinavian and Nordic German cult plays.

The single use of one or another of these instruments and their blending in orchestras produces the nerve-stirring sounds that seem to translate the voices and presence of supernatural beings, even for the white man who ventures into the audience during a

primitive show. The possibilities are tremendous, and they are made use of with exceptional skill. From the sound sticks of the Australians to the rhythmic trance of the drums, from the xylophone-accompanied choruses of West Africa to the *luras* and citharas of Scandinavia and of Greece, music has added the divine touch to the spectacles of man; it has enthralled actors and audiences alike in the theatres of the wilderness and in the opera houses of our time.

Rhythm—sound—music—but older was the spoken word. Sequences of spoken words, as they are used in traditional plays and songs, are 'texts,' and such texts are as old as, if not older than, the consciousness of music.

We are already familiar with the habit of primitive tribes of using the repetition of shouted syllables or cries as a means of dramatic expression for the sake of rhythmic trance during their dance plays. Equally effective are the ever-recurring sentences repeated by the carriers in African safaris, like: "Here comes the white man, mighty with many things—a beard has he and a helmet, his face is red, his feet are soft—hahaha!"

Such sentences turn the drudgery of everyday labour into a regular 'performance.' To this type belongs also the Hawaiian sing-song:

Lii-coo-honua, the man,
Ola-ku-honua, the woman,
Kumo-honua, the man,
Lalo-honua, the woman . . .

repeated again and again with the names of each couple attending the show.

A combination of the continued text and the dramatic use of exclamations is the flowing tale song of the chorus leaders in Australia, Africa, and elsewhere, with the rest of the singers restricting themselves to a mere repetition of cries, syllables, or one monotonous sentence.

The original syncretism of the oldest cultures differentiates itself in the agriculture societies, and develops in the high cultures to the fundamental types of literature: poetry, prose, and drama. They became literary art in the "Ollanta" drama of the ancient



NIAMBARA FLAUTIST

Upper Nile

After Bernatzik

Peruvians, the Prakrit-language classical plays of the India of 500 B.C., and the Chinese dramatic masterpieces, especially of the twelfth century, which have not been surpassed in form or idea.

But however complicated the rules of literature in later developments, any literary masterpiece is based upon emotion and thought, subtleness of feeling, and beauty of expression. In this respect, even the most renowned tragedies and comedies of the great world theatre are in no way superior to certain lyric texts of primitive man like, for instance, this little Australian alternating song in honour of the cicada which lives on trees, the totem animal of a tribe east of Finke Gorge honoured by 'its' people with an annual nocturnal show performed by a large group of elated actors :

The little cicadæ are chirping
When ev'ning blesses the West—
They sing, and humiliated
Quiets down the song-bird's breast.

Down from the tree must fall then
Who self-forgetting sings:
In the sunbura-grass they quiver,
With sunset-reddened wings.

The young cicadæ are singing
In the Ilumba near the stream;
The tree, so heavily laden,
Sways slowly; he's adream.

The little cicadæ are singing,
Inviting Night to Earth,
That it may gently cover
The Bush and our hearth.

CHAPTER TWELVE

Life, Liberty, and the Pursuit of Happiness

THE SPIRITUAL AND material possessions that characterize the life of precivilized man are, within the framework of their natural surroundings, rich and varied. They have homes filled with pleasant furnishings; they have crafts and skills; they travel; they trade; they pass round the news; they educate their children; they have their joys and entertainment; they are aware of the grandeur of art. With all these benefits, they are relieved from many of our modern worries—from the landlord or the tax collector, from the hazards of a job or the wire-pullings of politicians. Yet we call them primitives.

They have rules of behaviour—but do they have laws? They are no angels—who takes care of their criminals? They have no policemen—who enforces the maintenance of law and order? What agencies represent the common interests of all?

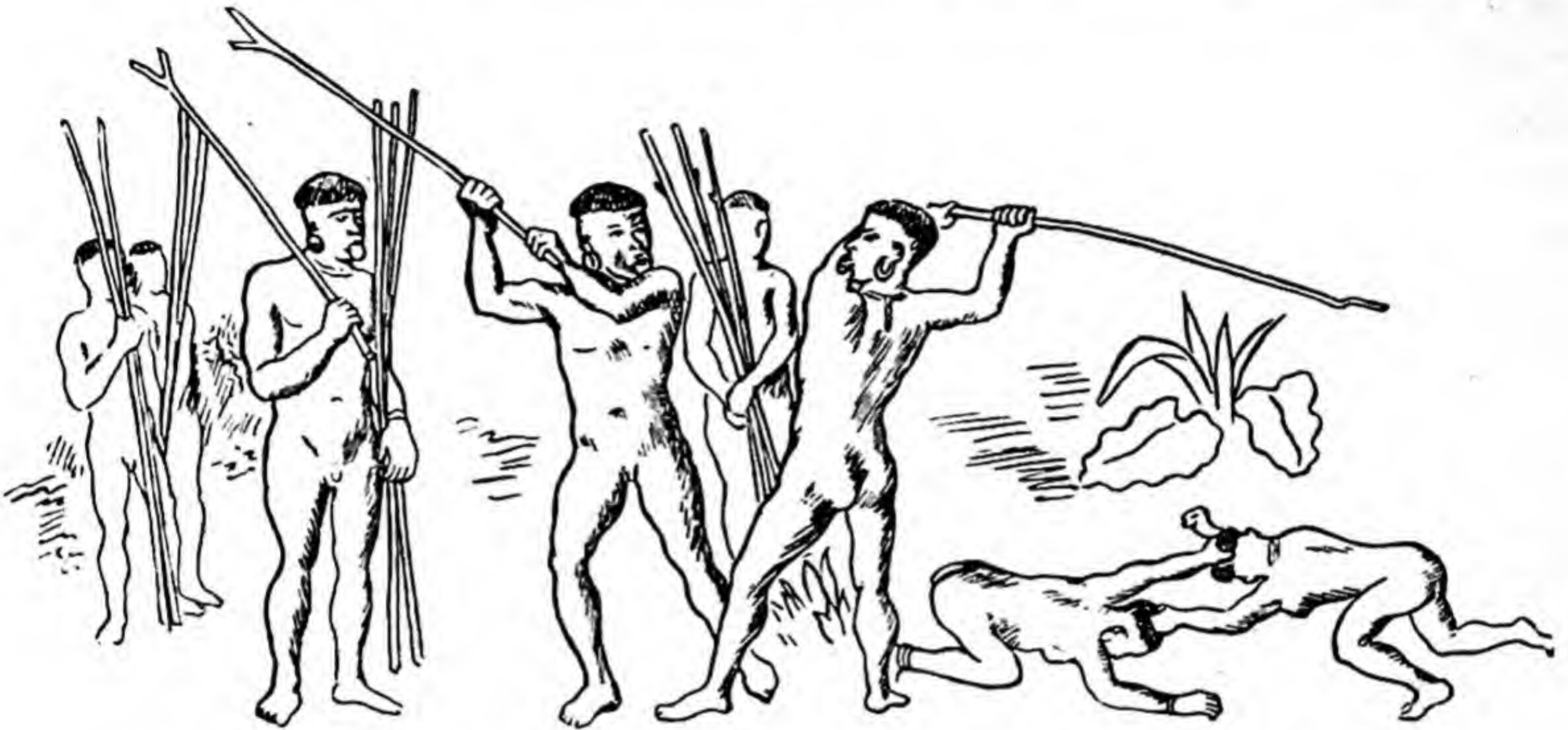
The general confusion about the answers to these questions has been so great that only very recently has it become possible to satisfy our curiosity about the development of the political and legal institutions of primitive societies. There have been many incorrect and even fantastic reports on their law by anthropologists and on their anthropology by lawyers, with the result that the facts have occasionally been distorted by lack of understanding and by sweeping generalizations.

All through the ages, from ancient history to the time of the great discoveries and often up to our days, primitives have been pictured as fabulous creatures—either happy idlers living in their own Gardens of Eden, or ferocious head-hunters of beastlike savagery. It did not occur to most of the civilized observers that they are men and women created in the image of God, that they are “created equal,” and that they, too, strive to obtain the supreme privilege of man: life, liberty, and the pursuit of happiness, whatever the shape of that happiness may be.

In primitive society, as in ours, it is the task of the political institutions—and there are many, as we shall see—to take care of the happiness and safety of the family, the community, the local group, the tribe, and the people as a whole. Legally and socially, the purposes and aims of government in a primitive society are the same as in modern society: to regulate life within and without the community, to hold the group together, to

safeguard their food supply, to keep up the established order, and to maintain peace inside and outside the borders.

In such tribes as the Australian aborigines and the Tasmanians, the Bushmen, the Veddas, the Botocudos, and the Fuegians, the territorial legal unit is the local group, not the single family or the single individual. The territory of such a local group varies among the Australians from four thousand to ten thousand square miles, and there are from twenty to one hundred members in



BOTOCUDO DUEL, DECIDING HUNTING-GROUND VIOLATION

After Prince Max zu Wied

such a community. The boundaries of the country claimed by the group are well known, not only by the members of the group, but also by those of neighbouring groups. The group in its entirety reacts against a violation of its territory—not the single individual or the single family.

Among the Tasmanians, a violation of the boundary was equivalent to a declaration of war. The same applies to the Australian food gatherers and hunters, among whom boundary violations always resulted in war. Except in the case of boundary violations, the local group resorts to war only in cases of murder or the abduction of a woman. It is the group's task to take vengeance on a group, not the individual's or the family's task to revenge itself.

But the wisdom of the wilderness and the respect for human lives do not allow wars which are waged over a violation of hunting-grounds to be continued until one of the fighting groups is destroyed. Often it is decided that an equal number of men from each side shall fight. In most cases the quarrel is settled by means of a

duel ordered by the groups. Indeed, even then there is no intention to continue the fight until one of the combatants is killed. It is sufficient that one shall be incapacitated. The Botocudos, in such a duel, leave their bows and arrows at home and use sticks only. It may end in a general brawl, with the women taking part by hair-pulling.

Sometimes a local group is forced, because of the increase of its members and the consequent necessity of extending its economic basis, to make an active invasion into the territory of another group. J. Frazer reports such a case from a local group of the Australian Walarai.

They sent their public messenger to one of the adjoining sub-tribes, asking for a part of the latter's land. This was refused, as being against tribal law, and also because the *taurai* in question was not big enough to admit to the proposal. The former sub-tribe then sent to say they would come and take what they wanted. The latter answered that in that case they would appeal for justice and help to the neighbouring sub-tribes. Thereupon both sides prepared for war, met, and, as usual, much talking and angry speech-making followed. It was at last agreed that next day an equal number from each side should fight it out, but when the time came the dispute was settled by single combat. This is the common cause and issue of a tribal quarrel.

We also have in our society 'the common cause,' but modern invaders don't waste much time on negotiations, and the settling of international disputes is not as easy a matter as it was in Australia.

Though generally death is the punishment for any transgression of the boundary, there are certain preferred persons, messengers who bear some distinguishing mark, who are permitted to enter



SHIELD
Murrumbidgee
River,
South-east
Australia



AUSTRALIAN
SPEAR

After F. D. McCarthy

foreign territory at the order of a neighbouring band for the purposes of buying, exchanging, or conferring with others of their kind. This happens especially when the region belonging to a band contains needed natural products, such as stones for axes, ochre, or the much desired narcotic pituri in large quantities. If such goods are wanted in exchange the local group concerned has to be officially notified. In most cases an invasion of foreign territory without permission means death. Only the great diplomatic skill of the elders of an Australian tribe once averted the death penalty for an illegal trespasser.

Howitt reports that a Wudthaurung man of south-east Australia had broken stones from a quarry of the Wurunjerri without their permission. The two groups met at the boundary-line between their hunting-grounds to discuss the case.

At the meeting the Wudthaurung sat in one place, and the Wurunjerri in another, but within speaking distance. The old men of each side sat together with the younger men behind them. Billi-billeri had behind him Bungerim, to whom he "gave his word." The latter then standing up said: "Did some of you send this young man to take tomahawk stone?" The headman of the Wudthaurung replied: "No, we sent no one." Then Billi-billeri said to Bungerim: "Say to the old men that they must tell that young man not to do so any more. When the people speak of wanting stone the old men must send us notice." Bungerim repeated this in a loud tone, and the old men of the Wudthaurung replied: "That is all right, we will do so." And they spoke strongly to the young man who had stolen the stone, and both parties were again friendly with each other.

These are typical cases of the local group's reaction to outsiders with regard to landownership. The solidarity of the community is expressed in their reactions to conflicts with outside communities; this binds all its members together with strong ties, and unifies the band. This is only logical when we consider that a person cannot leave the territory of his local group without the fear of being killed. One of the great goals is to secure outward peace. Within the community, too, preservation of peace and mutual assistance in the securing of food are the supreme task.

The provision of food is determined by a reciprocal social insurance, sanctioned by public opinion. Every individual knows the norms which bind his own community. The distribution of the kill is definitely regulated, and the part of the animal given to the less fortunate hunter is not a gift but merely the fulfilment of a legal obligation. When a hunter has killed a kangaroo one

hind leg belongs to the hunter's father, the other to his paternal uncle, the tail to his sister, the shoulder to his brother, and the liver to himself. Among the Ngarigo, only the head of the killed wombat belongs to the hunter; all other parts are distributed within and outside his immediate family. Regulated distribution has been reported of a great number of other Australian tribes of hunters and food gatherers. The providing of food is not only an obligation within the family, but it extends to the local group. The same applies to other tribes of the same economic stage—the Bushmen, the Botocudos, and the Veddas. Among the last the honeycombs of the rock bees are equally divided among all families.

Since the disposition of land and the regulation of food supply are problems of the community as a whole the question arises whether there is any private property at all in our sense of the term. The answer to this question is not easy. But we may say that if the term 'property' is not used in the broad sense of the Anglo-American law, but as "the absolute domination of one person over one thing," then there is no private property here. Such things as weapons, tools, ornaments, and articles of dress, or even quarries of ochre deposits, may 'belong' to a person, but this private property is often burdened with many rights of third parties, and is not exclusive. The consciousness of personal property in our sense is altogether lacking. Presents, for instance, given to individuals shortly appear in the possession of other persons who received them from the original recipient. "The individual is not recognized. He has no independent right," write Fison and Howitt. At any rate, movables which are valuable and necessary to the clan never can be private property.

Thus the entire daily life of the individual is embedded in the social and legal care of society, whose strongest weapon for the enforcement of internal peace is public opinion. Preventively, it forces the individual to obey the law; actively, it brings about punishment of transgressions. The individual cannot escape unfavourable public opinion, for he cannot leave the local group and join another community. That would mean certain death. For this reason alone public opinion is the strongest regulating agency among food gatherers and hunters. The agencies of law enforcement do not need to be well developed, and exist only in rudimentary form.

The fundamental rule, that peace within the community must be upheld, does not always permit the law of equivalent retribution, a *lex talionis* ("An eye for an eye, and a tooth for a tooth")—often not even in the most serious of all crimes, murder within

the group. For most transgressions of the law definite punishment has been designated. Among the Tasmanians, for instance, adultery was punished by beating, and driving a spear through the offender's leg. Among the Botocudos the woman who has committed adultery is beaten or branded by her deceived husband. In Australia the same crime is atoned for by a duel of the conflicting parties, which, however, never ends in death.

In Australia and among some other food-gathering tribes the executive agencies of public opinion are the old men who, seasoned in life and in the tribal laws, not only inform the younger ones



AUSTRALIAN NATIVE, USING SPEAR-THROWER

concerning the boundaries of the clan territory but also instruct them in the laws of marriage, the rites of initiation, the distribution of food—all those norms existing from time immemorial. In the hands of these elders also rests that judicial power which concerns the community as a whole and is called upon when a settlement between the parties is impossible. As well as dealing with boundary violations, these old men have to mete out judgment in the case of a murder of a clan member by a person outside the clan—which always results in war. Within the clan, the cases brought before the council of the elders are those connected with murder, sorcery, infringement of marriage regulations, or betrayal of the secret ceremonies at the boys' initiation. The punishment usually consists in the wounding of the culprit with spears, but not in killing him.

Chieftainship was but slightly developed or absent. The person with greater physical or mental agility was able to exert considerable influence over his group, but he too was dependent

upon public opinion. When chiefs and their functions are described in this stage of culture they have usually been given such positions by the white people to facilitate their dealings with the group. A revealing example has been published by Dawson: the facsimile of the treaty which some of the first white settlers in Australia concluded with some so-called chiefs about the cession of 100,000 acres of land.

These, roughly speaking, are the regulations in the legal life of the food gatherers and hunters. The facts show that it is altogether erroneous to describe the legal status of these tribes as anarchic. On the contrary, the legal concepts and norms, their structure and their applications, are shown with amazing clarity in the reported facts. Solidarity of the community against outsiders in the case of a boundary transgression or of war, and against insiders who violate rules dealing with the provision of food, is the characteristic feature. There are only slight beginnings of private ownership, though it cannot be denied that certain individual rights similar to ownership exist, but not in reference to the soil or to objects valuable to the entire group or necessary for its sustenance. The pressure from without, the wall formed by the limits of the tribal area, is one of the strongest supports of public opinion and of its executive agencies for the enforcement of legal norms within the group.

The economic basis of the harvesting peoples—another large group of primitive tribes of the pre-productive stage—has been the cause of various special forms of legal structure and government, different from those found among the hunters and food gatherers. Although here, too, the local group holds the ownership of a limited territory, the inviolability of the land is infringed upon. Using modern terms, we may say that the absolute value of real estate shifts to the harvesting ground, the part essential for the food supply of the community. This part of the territory of the community increases in value. Being the main source of support of the local group, it now occupies the focal position in the economic and legal situation.

The size of this harvesting area is sometimes immense—a bunya-bunya district may extend over seventy miles. The dimensions of the lily-root territory on the Roper river and the nardoo region of the Arunta are similar. The harvesting ground is usually the place where the local group takes up residence, for the economic structure demands a more settled mode of living, if only to safeguard the storage space. Thus the harvesting ground becomes the chief factor in the concentration of population. The number of members

of a local group is far greater in these tribes than it is among the hunters and food gatherers.

While among the latter a transgression of the boundaries of the tribal territory meant certain death, this is not the case among the harvesters. There is no punishment for any transgression of the boundaries. Indeed, the elasticity of the boundary conditions can go so far that the boundaries are in a way nullified. The Australian Bangerang and related tribes could take refuge in one another's territory. At times two groups may even possess a common harvesting ground. When the fruit of the harvesting ground matures the neighbouring tribes are invited to partake of the superabundance.

These meetings exercise an important cultural influence. They affect, so to speak, the external politics, and are the source of many new legal institutions in the fields of primitive 'international law,' 'commercial law,' and 'copyright law.' In Australia, for instance, an extremely significant dissemination of cultural elements takes place during the gatherings of the harvesters. These meetings are not only occasions for trade, for common initiations, for corroborees and games; they also bring about cultural exchange between the tribes. In speaking of the Kabi, Curr describes the travelling about of corroboree plays:

The poet having introduced his work to the neighbouring tribes, these in turn invited their allies to witness it and aid in the performance. In this manner a corroboree travelled, and was sung with great enthusiasm even where not a word of it was understood. The dramatic part in these performances was sometimes very considerable.

The idea of a copyright law is by no means unfamiliar to these harvester tribes who provide for an effective protection of this law. Already we find here the beginnings of an international copyright protection.

Many explorers tell of so-called 'neutral territories.' These are not the same as boundary sections abandoned for fear of hostile neighbours (as is sometimes the case among the hunters and food gatherers), but those which have been created by a treaty of neighbouring tribes. For instance, by mutual agreement the Australian tribes on the banks of the Gregory created a neutral territory, fifty by one hundred miles in extent, as a place for their meetings. Such a territory has an economic as well as a legal aspect. Economically, prohibiting the use of this land preserves the supplies of plants and wild animals for the meetings of these tribes. The legal aspect is that the creation of neutral regions is possible only among tribes

whose economic foundation is secure within their own tribal territory.

As for Australia, there can be no doubt that the harvesting ground, like the land in general, belongs to the local group as a whole. Temporarily, at the time of the harvest, individual families may receive an assignment of certain parts of the harvesting ground, but the land is the property of the community. Also, among the Chaco tribes and the tribes which harvest the wild potato, and among the Hyanyam in Matto Grosso, the ownership of the harvesting ground lies with the local group. In regard to the North American Ojibway, the Menominee, and the Winnebago, early sources such as Catlin and Schoolcraft make it clear that the harvesting ground belongs to the entire local group, which distributes the field anew to individual families before each harvest.

However, apart from the harvested products, the plants gathered and the animals hunted are not always the exclusive property of the gatherer or the hunter, but are handled according to rules similar to those prevailing among the food gatherers and hunters. The Arunta and Loritja have exact prescriptions for the assignment and distribution of the kill. At times, the hunter has no right at all to his prey. The right of disposal, however, does not rest with the political local group but with a smaller unit, the totem clan, which is generally the economic unit.

In times of need the economic unit is responsible for the food supply of the individual. Along the Upper Lakes it is an old rule that, "if the food of any worthy family fails the entire food supply of the social group is available to make up the deficiency." Chief Pokagon writes of the harvesters of the Potawatomi: "Our people always divide everything when want comes to the door."

Besides the collective responsibility for supplying food of the totem group (mystically related through a mutual legendary ancestor: plant, animal, or inanimate object), and of the local group for political matters, there also exists among the harvesters a development of more detailed legal rules regarding private ownership, which is protected by the tribe. While violations of property rights are rare, anyone who breaks these rules is punished.

Private ownership of fruit-trees exists, and is always respected. Among the Arunta the ownership of such a tree is indicated by placing a bunch of grass on the branches. When a man finds a nest of bees he marks the tree containing the honey by pulling up the grass round the roots and placing sticks against the tree. If, in spite of these markings, some one steals the fruit or the honey the injured party has the right to spear the thief to death. The

punishment of spearing is meted out also to anyone who takes a slain animal without the hunter's permission. The same punishment also applies when an animal, merely wounded, is caught without the consent of the hunter by some one else. If, however, a person asks the hunter he has the right to demand part of the prey.

The thief who steals things not essential for the support of life does not fare quite so badly. If he returns the stolen objects the matter is regarded as settled. But if he refuses to relinquish the stolen goods the owner has the right to spear the culprit's leg or to throw a boomerang at him.

Private property is usually inherited by the eldest son and, if there are no sons, by the nearest relatives.

The adulterer is occasionally punished by a temporary exile from the local group, lasting for about two or three months. Among the food gatherers and hunters such a sentence would mean death. Among harvesters it is a mild punishment, and the temporal limitation can be understood in such a tribe only.

The organization of the public power and its executive agencies among these tribes show a fairly uniform picture: chieftainship is not specifically developed, though its beginnings are present more clearly than among the hunters and food gatherers. Even hereditary chieftainship occurs. Two ways of chieftainship are open: through leadership over a numerous and powerful totem clan, or through the possession of outstanding individual qualities. The deciding power is always the public opinion of the political community—that is, with the members of the local group, sometimes represented by a council of elders or a council of the chiefs of clans. It has often been pointed out that, especially among totemistic tribes, the legal rules are strongly religious in character and have their roots in the totem myths. I have not found any support for this theory; on the contrary, Strehlow expressly states that among the Arunta the fundamental legal concepts are not derived from the tribal ancestor but have apparently been developed by the council of elders, who impart them to the young men at the initiation ceremonies.

Another especially interesting legal institution found among these tribes is the right of asylum and the law of taboo, the two being closely connected. The harvesting ground was taboo until harvesting time, and this taboo was lifted on a certain day by an authorized person. After this, harvesting was allowed. Taboos similar in effect, though not in cause, are connected with certain localities which are regarded as the domicile of the totem spirits or as hiding-places for the sacred totem utensils of the tribe. Among the

Arunta an institution is found which is clearly a right of asylum for members of the tribe as well as for strangers. The criminal and the stranger are safe, and cannot be seized when they flee to this tabooed place. Animals and plants, too, that happen to be there are taboo. The right of asylum was probably religious in origin, but had predominantly economic consequences. It is an example of the reorientation of purpose in primitive law.

In contrast to the legal institutions of the food gatherers and hunters, the legal norms of the harvesters are no longer subordinated to the principle of tribal territory; a transgression of the tribal or sib territory is not punished, and only particular parts, such as the harvesting ground or the place of refuge, are protected by taboos. However, here too the political unit is represented by the local group, while the economic unit is smaller.

The difference in economic form and the resulting relaxation of enmity against outside groups have two obvious results. One is the accumulation of a greater number of people, not only of those belonging to the band itself, but sometimes even of others from other local hordes. The legal result as regards outsiders is the creation of institutions intertribal in character (neutral territories, intertribal festivals); as regards internal institutions, the creation of forces making for a great differentiation of law and norms. How much of the external political picture has changed is shown by the fact that, in the North American rice-fields, villages are peacefully inhabited by members of four different tribes.

In the realm of internal politics the organization is stricter than among the food gatherers and hunters. Above all, however—perhaps as a reaction—a stronger emphasis upon individual rights has developed in those matters that do not relate to the safeguarding of the communal food supply—for instance, the copyright law. But also these tribes do not recognize individual ownership rights in respect to land.

Among arctic hunters and tribes influenced by them the institutions which serve the purpose of holding the community together, safeguarding its food supply, and guaranteeing internal and external peace, present a picture somewhat different from that of the societies just discussed. Almost all observers emphasize their strong communistic tendencies. For example, among the Eskimo the borrower of a boat does not necessarily have to return it if the person from whom he borrowed it has two boats; and the great whale hunt is an affair of the entire community. The 'communistic traits' of the arctic people are no more strongly developed than those of the tribes of other food gatherers and hunters, among

whom we have already found the community established as legal unit and legal subject. The distinguishing characteristic of the arctic culture is a stronger tendency towards individualism within a definitely democratic pattern. Although I do not go as far as Bogoras, who says, referring to the Chukchee, "It may be said that a lone man living by himself forms the real unit of Chukchee society," I believe that this individualistic trait is quite easily recognizable in the arctic world.

The boundaries of the local group fluctuate, and transgressions of the hunting boundaries are not punished by death, whether in the case of a member of a strange tribe or group. Often it is not punished at all. The Tungus of the lower Amur river, for instance, usually did not keep within their territory, but would hunt on the lands of others, especially on the Gilyak territory, without any quarrels ensuing. The hunting-ground, which at first probably belonged to the local group, is sometimes divided among several family groups. These two principles may exist side by side, or even alternate at times.

The political unit depends on the territorial principle and not on the kinship system. Among the maritime Chukchee, for instance, the village does not consist of families related to each other, but of those privileged to hunt. Generally the economic unit is a smaller group than the political society. The fishing unit is the crew of a boat and their families, whose leader divides the catch. Among the peoples of arctic Asia and the Alaskan Eskimo, the economic unit, be it the crew of a fishing boat, a hunting family, or a group of families, often uses property marks for safeguarding its catch. However, there is no proof that these are individual property marks. They are few in number, and refer to a number of people—that is, the economic unit.

The safeguarding of the food supply is first of all the responsibility of the respective economic group and then of the whole community. The economic security of each member of the community forms the focal point of the legal aspect among arctic tribes to such an extent that all individual rights are secondary to it, but this is true only when the life of an individual is threatened by lack of food.

Thus, among the reindeer-breeding European Lapps, for instance, extensive use of individual property marks exists, together with an obvious inclination towards strong individual definition of property rights in connexion with movables. These individual rights, however, may be violated at any time under special circumstances. This goes so far that even the theft of reindeer may be

legal if the thief required the stolen animals for his own use, to obtain the meat for eating. From the Lapp's point of view this is not considered a theft, even though the sharply defined right of personal ownership has been disregarded. This example is not typical of the herdsmen but of the arctic hunters. This part of Lapp law is a hunters' and not a herdsmen's law.

Another example, taken from the Montagnais-Naskapi, is on the same legal level. The hunting privilege to a particular hunting-ground can be violated at any time and by anyone who finds himself in need of food. The stranger may hunt and may set traps, but only to satisfy his hunger and sustain his life. Indeed, he may even prey upon a beaver house marked as some one's property when he is in need, but only then.

This mutual assistance is concerned only with the maintenance of life, and goes no further. It especially does not apply to debts. Obligations are not fulfilled by a father in his son's behalf, nor by a widow in her late husband's. There is no such thing as solidarity with regard to obligations among members of a family. What mutual assistance there is, is not necessitated by pressure from the outside, as is the case among food gatherers and hunters, but is compelled by public opinion which, in a single-class society, is much more powerful than in ours and has a totalitarian significance.

Public opinion is effective among the North-east Algonquians, not only within the local group but beyond it, and can prevent an ill-reputed member of a local group from finding refuge in another group. In many cases this means death in the forest. Political authority is not held by the chief even when there is a chief; if at all, it is held only by the elders. In the last analysis, it rests with the public opinion of the local group as a whole.

The chief's lack of power among the Central Eskimo has been described by Boas in these words: "His authority is virtually limited to the right of deciding on the proper time to shift the huts from one place to the other, but the families are not obliged to follow him. He may ask some men to go deer hunting, others to go sealing, but there is not the slightest obligation to obey his orders." The same powerless position of the chief—if there was such an office to begin with, and not just one artificially created by the Russians—is reported by Bogoras of the Chukchee; and from my own experience I can say the same of the Naskapi, among whom the Mistassini band has had no chief for years and up to now has not elected one, in spite of the Indian agent's demand that they do so.

In certain Eskimo tribes of Alaska we find exceptions to this rule;

these are the tribes which perhaps have been influenced by the social stratification of the North-west Americans and who not only had a tribal organization with a chieftainship but also a vertical classification of society, including a class of slaves. Beginnings of slavery are further found among the inhabitants of the Aleutian Islands, and also among the Chukchee (probably influenced by the herdsmen tribes which were advancing from the south), who in their battles with the Western Eskimo made slaves of their prisoners of war. Social stratification, however, was very little influenced by this.

Expert hunters and trappers enjoy special authority, dependent upon their personalities, and therefore they often occupy the rôle of mediators and peacemakers in the community, but they too have no unconditional authority. If a quarrel cannot be settled, or if one party does not want to listen to reason, the elders are powerless. To keep peace as long as possible and as long as the community as a whole is not disturbed is the fundamental motive in the attitude of these tribes.

In this respect public opinion has a twofold task : first, that of a preventive which compels a positive and lawful behaviour of the individual ; secondly, that of intervening actively in connexion with any violation of law. However, here too it is required that an interested group call for action and that the case be such as actually to threaten the peace of the community. Thus the occasional trap thief or trespasser or quarreller is not taken to task by the community, but his punishment is left to the injured party or to the group concerned. The community more or less acts as neutral spectators, as, for instance, in the song contests of the Eskimo.

The community, however, takes a part whenever its economic security is threatened by the behaviour of one of its members. This is the case with incorrigible thieves, persons who habitually hunt on the lands of others, chronic quarrellers, and fighters—in brief, with those whom to-day we call habitual criminals. The punishment may be tying to a tree, as among the Montagnais-Naskapi ; beatings, as among the Eskimo of Bering Strait ; exile, or a sentence of death which is carried out according to circumstances by shooting, knifing, drowning, harpooning, or in some other way.

The procedure and the executive agencies of public opinion are not uniform. Among the Montagnais-Naskapi there exist four law-enforcing agencies : the chief and council, the shaman, public opinion, and sometimes the manager of the Hudson's Bay Company post. Among the Chukchee action was taken by a group of especially notable men selected by the community. Finally, even

a single person, without any legal procedure, could receive the command or the tacit consent of the community to kill the criminal. As proof for the conviction of the criminal, use was often made of an oath of the accused, never of an oath by witnesses. The accused Chukchee called upon the sun as helper, or he swore by the bear.

These three great different groups of peoples which we have so far discussed are culturally the oldest societies of mankind. They correspond to the tribes and peoples of the Palæolithic Age, and have preserved many cultural complexes of early man. Their form of economy is acquisitive and pre-productive. Often the existence of legal institutions among these tribes has been denied altogether, but the facts are quite different. The law of these acquisitive tribes is, of course, not a judge-made law. It is law of the people, by the people, for the people.

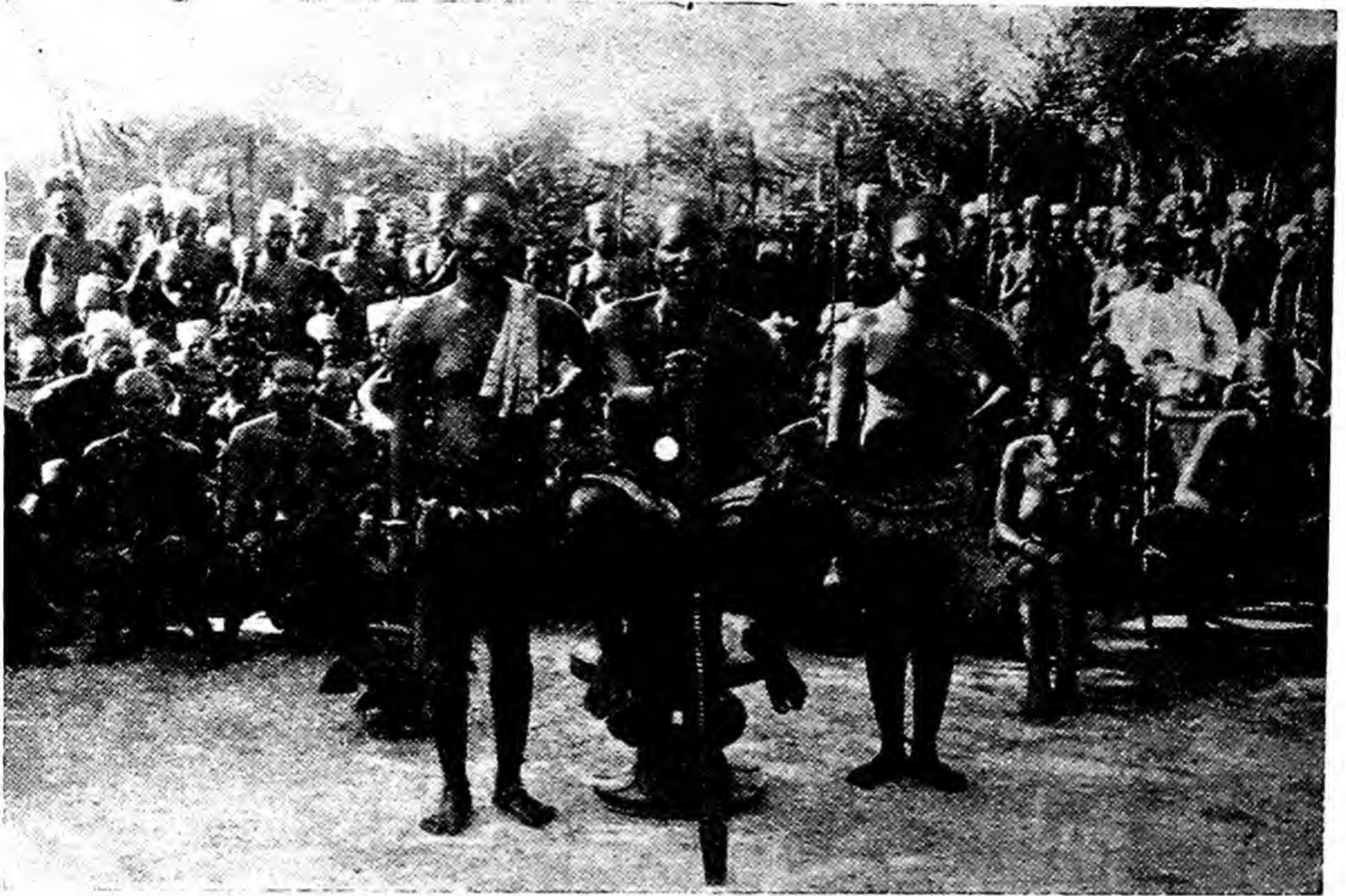


BLACKFEET JUDGE WOLF PLUME
*American Museum of Natural History,
New York*

The numerous discrepancies in our society between the feeling of the people about what is right and the decisions handed down by the courts—the opposition of law and justice—hardly exist. As in other respects, so also in legal concepts the individual is merged in the society in which he lives, and his individual acts have repercussions in the whole social structure. Individual and community very intimately know the law, and their simple legal principles do not require the interpretation of learned jurists. There is little room for the theoretical angle, since their law is essentially a practical law created for the sake of life. Its interpretation is determined by this purpose, and so are its decisions.

Legislative or appellate corrections are equally impossible, as

is authoritative law by rigid command from above. The permissible leeway in the meting out of justice is sometimes considerable. This does not mean that the technique of the law machinery is chaotic or lacking. On the contrary, it is amazing how in such primitive cultures the legal aspect is developed and how law and procedure have crystallized into an explicit body of rules, sanctioned



MANGBETU PALAVER

Belgian Congo

American Museum of Natural History, New York

by tradition and expressed by public opinion, which is rarely divided in these one-class societies.

With the development of productive economy, not only has the structure of society changed but also the structure of the law. However, this transition was not a sudden one. We still find in the legal organization of the early agriculturists traits characteristic of the acquisitive societies, especially in so far as the social security of the individual and the territorial rules are concerned.

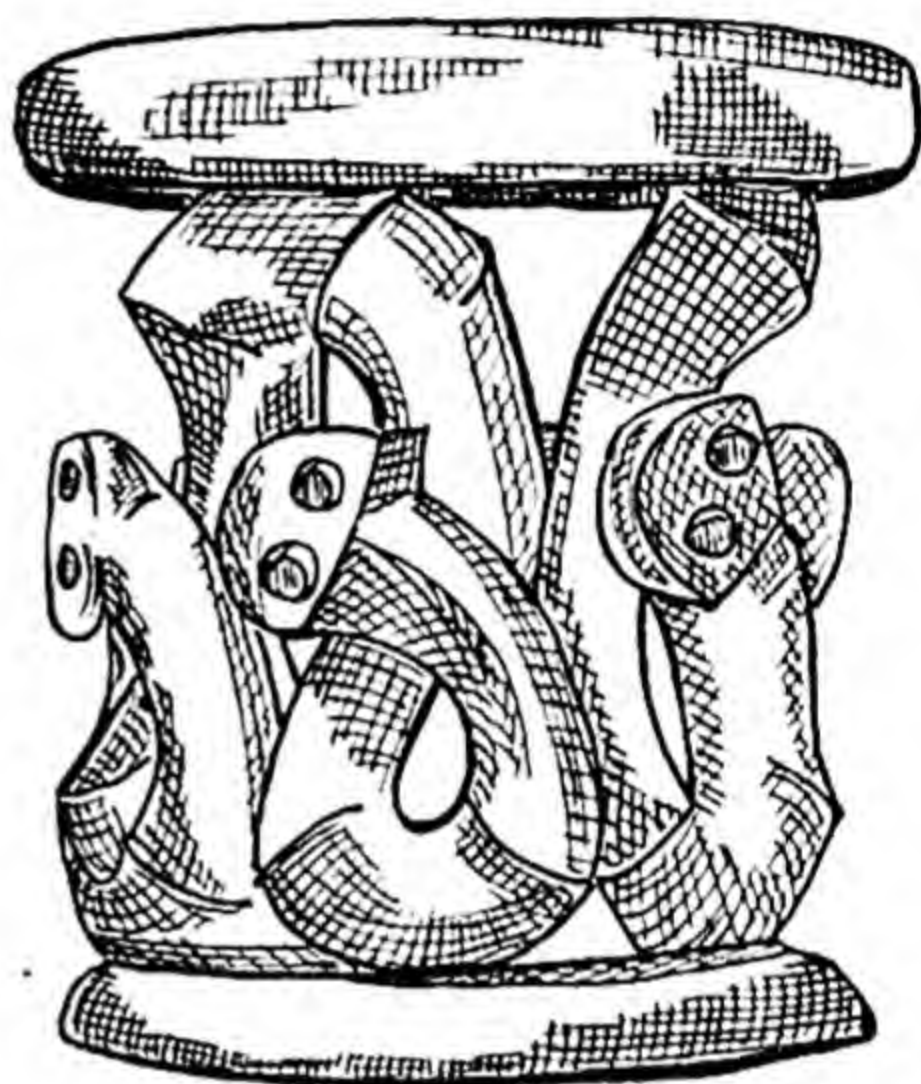
The central territorial unit of the simpler farming societies is the village ; that is, the limited area of the village with its numerous huts of single families and of family groups, or a single sib house in the centre. The tribes seem to be divided everywhere into such

independent villages, headed by a chief who is sometimes loosely dependent upon a high chief. However, his importance is very slight. The position of the Kai chief of New Guinea, for instance, was indicated only by the fact that he possessed the largest field, but his greater wealth had to be utilized in obligatory hospitality towards his own village and towards strangers. His power was extremely meagre, and lay in representation exclusively. He had no right over life and death at all—except among a few South American tribes in case of war.

Authority is vested in the council of elders. Among the horticultural tribes matriliney was probably originally prevalent in regard to laws of descent and inheritance, although owing to an intricate conglomeration of factors we have not everywhere a very clear picture of this development. To-day, in the woodland tribes of the Cameroons the family is patriarchally organized, but this order is obviously of recent origin, for even women can be chiefs. Among the Cross river tribes, the Bakwiri, the Duala, and the Batanga, the originally matrilineal organization may still be clearly recognized.

Land originally was common property, and it is doubtful whether its cultivation created property in our sense or merely a right of usufruct. The limitations imposed upon the sale of land are a criterion. The Iroquois said: "Land cannot be bought and sold any more than water and fire can." In Melanesia and West Africa, too, land is not an object of trade. Only in cultivated land do we find the beginnings of sib and family or individual ownership.

In West Africa, Melanesia, and South America women have no political rights or enjoy such rights only as members of a secret society. In contrast to this, the Iroquois women stepped into the political foreground. Women apportioned the arable land every second year, and it was they who elected the chiefs. But their privileges went even further: they had a veto right over the council of the men, even in decisions on peace and war. They also had the right to adopt strangers into the tribe, and could decide on the fate of the prisoners of war.



PALAVAR STOOL

Bamum, Cameroons

Museum of Ethnology, Leipzig

The mutual assistance rendered in the clearing of a field which is customary in Melanesia, South America, and, although not quite as frequently, in Africa, indicates that the responsibility for the provision of food was not the concern of the individual but, in the final analysis, a matter for the community. This, however, becomes evident only in times of need, and serves merely to prevent a too strongly pronounced plutocratic development.



TOP OF
CHIEFTAIN'S
MACE

Songo,
Portuguese
Congo

Museum of
Ethnology, Berlin

Although land as a rule is not owned by an individual, movable objects generally are considered private property. This development is especially distinct in West Africa, where dues are collected for membership in the secret societies. The institution of the secret societies, especially in Melanesia and Africa, was a more important factor in the execution and development of the law of these tribes than the chieftain or the council of elders.

Executive and legislative powers among the Ekoi of north-western Cameroons, for instance, lie in the hands of the Ewingbe secret society, *ewi* meaning law, *ngbe* standing for leopard society. Public laws may be accepted or rejected by its members. As the highest court of appeal in all trials, it emphasizes an institution unknown to the peoples of the acquisitive group. Admission to the secret society and advancement into its higher degrees usually depend upon the payment of an entry fee. Anyone is free to leave the society, but the advantages of membership are such that this practically never occurs. The legislative powers of these secret societies often exert an authoritative type of jurisdiction which deeply influences the democratic and introvert little communities. Only in culturally younger groups is this jurisdiction turned over to the constituted village community represented by the chief and by the palaver (council) of the elders.

What such a trial is actually like may be illustrated by the following example. If, for instance, a Bakosi creditor claims a goat which his debtor refuses to deliver he appeals to the members of the Losango society to help him. The secret society plants its insignia in front of the debtor's hut. This usually works at once. For this service the society also receives a goat from the debtor.

If the debt is not paid immediately, and if the society's insignia has to remain in front of the debtor's hut until the next morning, a head of cattle has to be paid, which is eaten by the members of the society. It is no wonder that any debtor hurries to satisfy his creditor and the secret society.

If a man has seduced another man's wife and refuses to pay him damages the secret society interferes in a similar way. Among the Basa, the Mungi and Um secret societies decide in nocturnal meetings on orders, verdicts, and penalties (the latter usually the death penalty) which are secretly executed. The public reaction is the statement: "The Mungi has tried us." Most secret societies help every seeker of justice to his rights—non-member as well as member.

Among such groups of agricultural peoples of the Old World larger political alliances extending beyond the village community are, as a rule, unknown. The secret societies are their instruments of international contacts. Their influence is not limited to village or tribe, but extends, especially in West Africa and Melanesia, over very large areas, without, however—and this is significant—leading to the formation of larger political alliances or to separate states.

This absence of political organization into larger groups is typical only in the Old World—in America we find among the corresponding tribes just an opposite development. The best example is the league of the Iroquois. The New York league comprised five, later six, tribes represented by a central council whose decisions had to be unanimous. In spite of hereditary leadership, this centralized body was of a loosely woven structure. Each of the member tribes could fight its own wars or conclude peace treaties, so long as the interests of the league were not interfered with.

Unlike the custom of the conquering tribes of the Old World—especially of Africa and Asia—the trend towards inter-tribal alliances was strong in America, even among tribes which did not have the makings of a nation—indeed, especially among them. This tendency may have been due to the white man's influence, as in the case of the Cherokee, who created for themselves a governmental organization after the pattern of the United States. The conquest of one tribe by another and the resulting formation of classes and of autocratic states which was the rule in the Old World, especially in Africa, were absent among the Indians who inhabited to-day's United States. One exception is the Powhatan empire, which extended at the time of its highest power over a region of eight

thousand square miles and included more than one hundred and fifty cities, mostly won by conquests.

Another fundamental difference between these African and American tribes lies in their methods of legal procedure. In addition to the right of self-help and the appeal to the secret society, the West African natives of the forest region have a well-developed trial system before the palaver court which is composed of the chief and the elders. The defendant is summoned in various ways, either directly by the concerned parties or through the chief. Accepted means of evidence are torture, oath, ordeals like the



SHILLUK WARRIORS

After Bernatzik

drinking of poison, testimony of witnesses, and other visual or documentary proofs. The decision of the judges is reached through a majority of votes in secret conference, after which the verdict is pronounced. A system of 'composition' (where an embarrassed debtor pays a reduced amount upon agreement with his creditor) dominates the procedure. Vengeance and other painful consequences are averted by the payment of fines.

This type of minutely regulated trial procedure is unknown among Indian tribes. Except for certain ceremonious and solemn declarations of the parties involved, other types of evidence, especially the many forms of ordeal, are unknown.

The economic basis of the culture of the herdsmen, who have no equivalents in America, is so often blended with elements of the harvesting and agricultural societies and has been so deeply influenced by the high cultures that there are probably no herdsmen tribes in their original form left to-day. Thus we find that most of the present-day tribes of herdsmen adhere to mixed cultural forms. However, despite wide divergences, we can establish common traits of government, conditioned by the economic pattern,

especially among the Central Asiatic and African herdsmen. The pastures are always the property of the entire tribe. But, similar to conditions in the harvesting cultures, the border-lines are not clearly defined, and unauthorized grazing on foreign territory is not punished. The tribe, as such, has hardly any legal functions—the individual principle of the patriarchal family unit predominates. This means that the former collectivist element is superseded by individualistic tendencies. The large family group, with its brothers, nephews, sons, and grandsons, claims even political independence.

The tribe is ruled by a chieftain, who may be elected or may inherit his office from his father. The degree of his influence depends on his personality and his generosity, which means that it ultimately depends again on public opinion. In making his decisions, the chief relies on a council of elders, and he cannot release any important decree, especially in regard to land, without the consent of the *umakarere*, as the Herero call them, or the White-Beards, as they are known to the Kirghiz. The fact that the chief cannot dispose of land was demonstrated to the German government on the occasion of the Herero war. The Germans had concluded agreements with the chiefs concerning the cession of land, but in native eyes the chiefs did not have the right to dispose of the land, and war was the result of this ignorance of tribal law.

Larger political alliances did not originally exist among the individualized societies of herdsmen, especially not among the camel and horse breeders. It is the concern of the involved parties to get their right, especially in cases calling for blood revenge. The custom of paying a 'composition' or the paying of weregild to the chief to make up for a committed crime (especially homicide) is not an original feature of the herdsman cultures. Where it occurs, secondary influences are responsible.

The most typical feature of the herdsman cultures is the development of personal property and the accumulation of wealth in the form of live stock. This favours the development of classes, and results in a vertical type of social order in which the distinctions between rich and poor become more and more pronounced. This line of hierarchic development, however, reaches its fullest extent only when it meets and merges with the cultural forms of the agriculturists.

The law of inheritance in most of these tribes is that of primogeniture (exclusive inheritance by the first-born). Only under Mohammedan influences do we find a certain degree of equality of inheritance by the heirs.

In the Old World, especially in Asia and Africa, the societies of

the herdsmen have brought about great political changes by their creation of large states and empires. Their warlike 'centrifugal' or extrovert attitude, in contrast to the democratic 'centripetal' or introvert tendencies of the agriculturists, has caused acculturations and other changes of far-reaching historical consequences.



BENIN WARRIOR

Ivory Carving from an
Elephant Tusk,
Sixteenth Century

West Africa

Museum of Ethnology, Cologne

Only at the beginning of the last century, all phases of a typical invasion by herdsmen into the tribal land of sedentary agriculturists were demonstrated by the warring expeditions of the Fulbe against Adamaua. The reason for these invasions was of an economic nature: they looked for new pastures for their zebus. Before they became the attackers and invaders the Fulbe lived among the Negro tribes, merely tolerated by them and often even oppressed. For a long time they granted to the chieftains of the agriculturists even the *jus primæ noctis*, the right to spend the first night with a newly wedded bride. But when the great Fulbe leader, Scheu Usmanu, called his tribesmen together to incite them to 'holy war' against the agricultural

'heathens' they rose to conquer. The result was the foundation of the Sokoto empire between Niger and Shari.

This Fulbe conquest is about the only instance in recent times which permits us to study the process of a meeting of herdsmen with farming societies in all its phases and without European influence. The Fulbe conquered Adamaua not as cattle herdsmen but by their tactical superiority, through their armoured cavalry, against which the farming tribes had no effective counter-measures.

After the submission of the 'heathens,' the Fulbe made them their tributaries and serfs, and divided all Adamaua into a series of despotically governed states which fully met the conception of 'state' even from the point of view of modern sociology.

Such a state is headed by an emir or sultan, supported by a large hierarchy of public servants, mostly recruited from the slaves. In Adamaua there is a prime minister or *kaigamma*, a chief of the armed

forces known as *ssárriki n lefidda*, and a master of the ceremonies, *ssalámma*. In addition to these, there is a multitude of lesser officials. The country is divided into a number of provinces and districts which are governed by vassals, each of whom is a *lamido* of the sultan. In case of war, the *lamido* has to furnish troops and has to flock with them to the ranks. He has to pay an annual tribute to his ruler.

Even the 'minorities' are represented at the court by their own intermediaries and consuls, the *Galamida*, who attend to the negotiations between their groups and the sultan.

The land was originally owned by the sultan, who boosted his income by sales and taxes, among which the market toll, collected by the *ssárika n kásua*, or bailiff of the markets, was especially profitable.

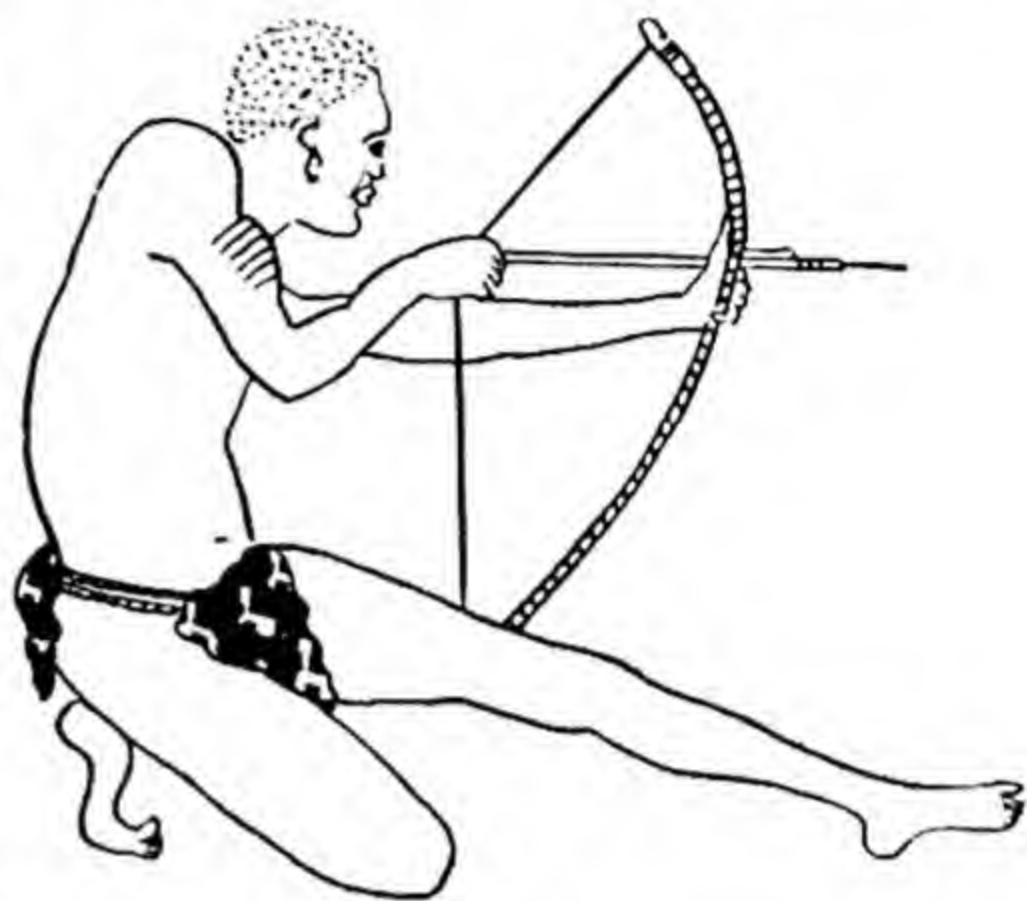
Legal matters were handled by the *alkali*, a professional judge appointed by the sultan, with the Koran, the usual Mohammedan source of law, as his legal code.

Among the penalties were mutilations and punishment by degradation or imprisonment. Murder and the theft of slaves or horses as a second offence drew the death penalty; theft was punished by the chopping off of the offender's right hand. The insolvent debtor was doomed to serfdom; and blood revenge was replaced by the payment of a fine, part of which went to the sultan.

This sketch of the Fulbe empire furnishes a fairly typical example of government among the peoples of the Sudan, from the Ewe in the West to the Kafficho in the East. It is also representative of the structures of states created by the Mongols and the Huns.

An American example is the state of the Natchez. Their 'theocratic' organization, with the ruler in the dual rôle of high priest and king (his title was Great Sun), knew the same vertical principle of social organization. The strictly organized class structure knew slaves as its lowest caste, followed by the common people, called Stinkards. These were ruled by the nobility, which itself was divided into three ranks—the Suns, the Nobles, and the Honoured Men.

The law permitted no marriages within the same group, but only



DJUR WARRIOR

Africa

After Bernatzik

from one into another. Thus the Suns, even the king and his sister, could choose their mates only from the ranks of the Stinkards. In general, the children belonged to their mother's class, but when a nobleman married a daughter of the people their children belonged to the nobility.

Advancement into a higher class was possible through bravery in war or through specially prescribed, often cruel, religious services rendered to the king and therewith to the state. By these means a Stinkard could become an Honoured Man and an Honoured Man a Noble—but only personal nobility could thus be acquired, as the children did not inherit it. The position of a war chief was open only to the Nobles and to the Suns.

Even in this type of society the old dislike of any absolutism embodied in one single individual, the person of the king—a characteristic attitude of all Indian tribes—created the restrictive measure that in vital matters of peace and war an elected council of old chieftains and warriors made their decisions independently from the ruler. The final decision rested with them, not with the king. The classes had to pay tribute to the king, who also was, though with certain limitations, the overlord who controlled the territorial rights.

These last examples indicate the development towards the well-known constitutional and legal structures of the high cultures. Here the whole impact of legal procedure—cases, rules, norms, etc.—was written down and recorded for the benefit of the population and of future generations. However, not the law cases and the legal ways of peoples with written history reveal best the history of the origin of legal institutions, but the law-ways of the relatively oldest peoples on this earth.

Are we justified in speaking of law and legal norms even with reference to the most ancient primitive tribes in the earliest stages of civilization?

Indeed we are, because there is no chaos, but law and order. The rules of law permeate the whole life of the community. The pressure from outside and public opinion within the society are the strongest regulating factors. The ownership of land originally is collective, and belongs to the local group; only the usufruct is sometimes allotted to a group of families or to a single family. The cultivation of land in itself does not create ownership. Even in the empires of the Sudan and of Ethiopia, where the land belonged to the king, land was not private property in our sense, for the king-priest was at once a demigod and an individual who was killed if the welfare of the people demanded it. The land

belonged to him only in his capacity as personification of the state. Food also was originally collective property. Connected with this is the collective responsibility of the group for the individual's food supply.

The development of private property shows definite beginnings among the harvesters, who are also characterized by their stronger development of 'copyright' law and of inter-tribal law. The right of asylum is found among the harvesters, herdsmen, and Polynesians, and its further development may be traced to the Greek and Mexican temples. The differentiation of classes has been most strongly developed among the herdsmen and the Polynesians.

This much, however, should be clear : that among aborigines very close relations exist between government and land ; that the land belongs to the clan, the tribe, or the people, but not to the individual ; and that also with regard to the provision of food the community bears the responsibility for a well-working system of social security.

Among the primitives it is not the individual who is eternal, but the people, the land, the law.

CHAPTER THIRTEEN

Magic and the Powers of the Unknown

THE WORLD OF primitive man is a world of magic. In the beginning there was power. This wonderful power is omnipresent, and its existence is as certain as the hardness of stone and the wetness of water, as all-pervading as the ether in modern physics.



MAGIC MASK AGAINST THE PLAGUE

Liberia

Museum of Ethnology, Cologne

This power, supernatural only to modern man, but completely real and natural to the primitives, is known to them by many different names. To the Malayo-Polynesians it is *mana*; among the Iroquois Indians it is *orenda*; among the Sioux, *wakan*; among the Algonquians, *manitou*. To recognize the workings of this power, to have part in it, to use it, and to master it—these are the aims of primitive man. In his world there are no coincidences—everything has its causes and associations; to discover these is the task of man.

In our minds the relationship between cause and effect is the result of our logical thinking, based especially on our experiences in the natural sciences. In the minds of primitive men cause and effect are not restricted to

the small domain of the physical world, but they are associated with the powers and phenomena beyond the visible world. To the primitive this all-pervading power is completely natural, because to his way of thinking the supernatural is a concrete reality. What we would call a phenomenon of faith is to him a manifestation of knowledge. All his actions and thoughts are guided by this magic conception of the association and inter-related participation of all things and elements of the visible and the invisible worlds. The effort to influence and utilize these mystical powers is called magic.

Belief in the forces of magic not only is distributed all over the world and constitutes the oldest form of a philosophy of life and of religion, it has also survived the millenniums and exists even in our time. To the primitive, each thing—be it animate or inanimate—possesses certain magic powers and qualities. While we know that similar causes will, under equal conditions, result in similar effects, primitive man does not recognize the eternal laws of nature. For this reason he attributes such phenomena as are without visibly evident causes, like illness, death, success, bad luck, rain, storm, and the rising of the sun, to certain magic powers inherent in all things.

Among the oldest forms of magic are those which deal with the obtaining of food. But the individual does not alone take part in the magic ritual: the whole group of hunters who, among the oldest acquisitive tribes, are the economic unit, combine their magic powers in one mighty ceremony. The caves of prehistoric man furnish evidence of such magic performances. The picture of the prey—the bear, the buffalo, the deer—was identical with the living animal itself in the mind of prehistoric man. When he pierced the image with his spear the success of the coming hunt was guaranteed. The Australians of to-day substitute for the ochre paintings of prehistoric man their sand drawings of the prey animals which are speared by the participants in the ceremony to safeguard the success of the next day's hunt.

The same magic result is attained when the symbolic image is replaced by symbolic gestures. In this case the magic ritual does not consist in the drawing and spearing of the game animal but in its pantomimic imitation. Such magico-realistic dances, which imitate the behaviour of the prey, are customary with the Australians and with many North American Indian tribes. A derivation of both methods is the manufacture by the medicine-man of a grass or cloth image of the animal, to be hung up in his hut, where it is shot or speared.

Similar magic performances serve to safeguard and increase the principal food plants of the tribe. In Australia the gathering of fruits and tubers is pantomimically imitated. Stones which play the rôle of the desired root are dug up and symbolically tucked away in the gathering basket. In the white world these magic rites have survived in the erection of the may-pole, although its original significance has deteriorated during the course of history. In some regions a young tree, preferably birch or fir, is ceremoniously brought in from the woods during Whitsuntide. Occasionally a young man, covered with leaves and flowers from head to toe, plays the part of the tree. In these celebrations the magic effect is no

longer evoked for one or a few specified plants—the may-pole and its variations have become the symbol of all growth, dedicated to the worship of the old fertility demon.

Not only animals and plants, but also the forces of nature are subjects of magic performances. The rising of the sun, the falling of the rain, are encouraged by symbolic actions, inspired by the belief that human neglect in this respect would cause the cessation of their beneficial effects. The sun would no longer shine, the rain no longer fall, if man in his tireless efforts did not force them to do their work.

Most prominent among these magic performances are those in which fire represents the symbolic element that invigorates the strength of the sun. Especially during the time of the declining year, when the winter solstice approaches, the sun is imagined as being tired, and is encouraged by magic flaming pyres.

Such ceremonies, as for instance among the Navaho Indians, are of impressive beauty. When night has fallen a gigantic pile in the middle of a pine-hedged clearing is lit and kept aflame until the break of dawn. The celebrants appear, their hair falling to their shoulders, their faces and bodies painted with white clay in imitation of the white colour of the sun. These imitators are the 'wandering suns.' Feather-trimmed dancing sticks in their hands, they leap towards the pyre to dance in closed procession around the flames. Imitating the course of the sun, they move from east to west and back. Although the glowing heat of the fire is by now almost prohibitive, the dancers try to approach as closely as possible, to set on fire the feather balls at the tips of their staffs. When one succeeds and the little ball has burned down he immediately replaces it by a new feather ring held in readiness—the symbol of the new sun—and shouts of joy echo all round.

The climax of the ceremony is the symbolic imitation of the sunrise. It begins with the appearance of sixteen men who carry in a basket the image of the sun. Assembling round a tall pole, they sing and dance. Suddenly they move backwards while, slowly and majestically, the image is hoisted on the pole and dwells on its top for a few impressive minutes, after which it sinks back and disappears again.

The approach of dawn terminates the ceremony. The white-painted dancers reappear to light a piece of cedar bark in the now smouldering fire, to fight for it in a mock dance, and to leap over the dying flames. The pine hedge surrounding the ceremonial place had only one entrance in the beginning—to the east, whence the sun arrives. When the real sun starts its journey

in the sky openings are made in the east, west, south, and north to indicate that the sun sends out its rays in all directions.

The picture of the 'sun' in the middle of a clearing and of the four entrances of the hedge appear on many objects of Indian art, and the Mexican fire-god is addressed as 'master of the four directions.' When the four lines of this drawn symbol are led to the centre of the sun ball the resulting ornament is a cross; and the multi-shaped crosses so frequent in the decorative art of the North American Indians are nothing more than symbolic drawings of the sun.

Similar ceremonies, though not always so elaborate, are held by many other primitive tribes. On dreary, overcast mornings the South African Bechuana decide to invite the sun to penetrate the clouds. The chieftain of the sun clan lights a new fire in his home, and every individual tribesman comes to take one glowing ember into his own hut.

All fire cults originate in sun worship, however their individual forms may vary, as among the Hindus, the Parsee, the ancient Mexicans, and elsewhere. The fire is always the representative of the sun.

Of no less importance are the manifold forms of rain magic, since the blessings of the rain are as important for the vegetation as those of the sun. An imitation of the rain always stands in the centre of these ceremonies. Water is poured on the soil or, as in some places in Australia, even blood, which drips from an opened vein. Strewn-about down feathers symbolize the clouds. Occasionally small quartz crystals are thrown over the women, who protect themselves from the 'rain' with pieces of bark. Agricultural tribes in times of drought spill water over



EASTER CELEBRATION OF THE QUICHE
INDIANS

Guatemala

Museum of Ethnology, Cologne

their plantations or twirl water in an 'inviting' way to induce the rain to join in.

The magic relationship exists not only between a thing and its analogous imitation—equally mystical is the connexion between a thing and its name. Even philosophers like Plato and Aristotle believed that the name of a thing is contained in it like an invisible kernel and that the name determines its very nature. Only during the last two thousand years have the Middle European peoples developed the idea that words are mere symbols for the objects they designate and that the things exist independently from the names by which we describe them. The older a culture, the stronger is the idea that a thing and its name are almost one, and this belief is the origin of the magic formula and the magic word or exclamation. Often the pantomimic imitation of the desired being or object is blended with the magic of words or names, and some Australian tribes 'fortify' their fertility dances by ceremoniously pronouncing the names of their prey animals.

While these magic performances relating to food and the forces of nature like sun and rain are of a challenging and positive nature, another type of magic which deals with the influencing of human beings is often of a more or less negative kind. The probable origin of the magic directed towards a person is the instinctive gesture of emotion. Even we may unconsciously clench our fist when we think of an enemy who is absent or whom convention forbids us to call to account. The same emotional reaction came to primitive man, who, carrying his weapons almost constantly, instinctively made certain symbolic gestures of threat with them. If, by chance, the enemy was stricken with illness or died shortly afterwards it appeared logical to assume that the initial gesture was the cause of the desired effect. Once such a causative relationship was established it led to the conviction that a threatening gesture necessarily caused the hated man's illness or death. The gesture consequently developed into a consciously applied magic action which was bound to bring about the destruction of the hated individual. The technique of 'personal magic' is founded on this conviction.

The Orang Benua of the Malaccan Peninsula believe that certain wizards of their ranks have the power to kill an enemy at long distance by simply holding a dagger or some other weapon in the direction of his home. Certain Australian aborigines throw magic arrows fashioned from human bones in the direction of the prospective victim. They believe that such an arrow flies on until it reaches the doomed man, whose body it penetrates

without leaving visible injury, resulting in sudden illness and possibly death. Other tribes use for the same purpose a miniature spear, which is thrown in the darkness while the magician deeply inhales and exhales. Finally, only a pointed bone or piece of wood is used as the magic tool, over which magic words are sung or murmured.

The frightful fact is that a man who knows himself the victim of such witchcraft often actually dies from it, because his belief in the effectiveness of the performance is as strong as that of his destroyers. When, in Australia, a native finds among his belongings a strangely shaped pointed bone whose significance is unmistakable he suffers such a violent emotional shock that he begins to ail, refuses to accept food, and sometimes succumbs to the strain. Powers stronger than he and even his enemies have spoken; he is doomed to die.

All such magic illnesses, they believe, are caused by an alien object, such as bone, wood, stone, or the like, and it is the task of the medicine-man to remove the foreign substance from the body of the victim if the latter is to survive. He does this by sucking, squeezing, singing, and other such actions, and all skilful wizards have their own private secrets of how to produce the visible evidence.

This oldest type of personal magic has produced a great variety of younger forms which all draw their magic effectiveness from some act of analogy. Minute details of the desired sufferings of the victims are acted out to make sure that they will be so stricken.

When, in Kamchatka, a thief cannot be identified animal sinews are thrown into the fire. It is assumed that the corresponding sinews in the body of the criminal will pucker up painfully to betray him. In some regions of Europe a jilted girl pierces at midnight the picture of her unfaithful lover with a pin or pierces a candle standing next to the picture, saying the words: "I pierce the light, I pierce the heart I love," whereupon she believes that the betrayer of her love is bound to die.

Intestinal pains are often ascribed to the doings of demons who tie knots in the bowels. No wonder, therefore, that the Lapps do not want 'demon-inviting' knots in any part of their clothing. The idea that witches cause pains by tying knots in parts of the human body still prevails in some rural regions of Germany.

In Arabia a guilty criminal is identified by a magic performance of analogy. A medicine-man assembles the entire village population

around him in a circle. All sit down while he drives a huge nail into the soil, singing and murmuring mystical formulas. In the end he says, "Rise!" and all stand up. Only one cannot move his limbs and remains bound to the ground—the criminal, whose own belief in the infallibility of the probe makes it effective.

The idea of the so-called 'tree of life' is another instance of analogous personal magic. In this case the destiny of a human being is tied to that of a freshly planted or chosen tree, and whatever happens to the tree will befall its human counterpart.

But symbolic magic actions may be used not only to bewitch a person, they may also serve to lift the spell cast by hostile influences or as a preventive precaution.

Some European villagers treat a thigh fracture by putting a broken leg of a chair in splints. Many 'purification' ceremonies are for the purpose of removing morbid agents from a human body. Ailing people, especially rheumatics, squeeze themselves through the narrow space between two columns in the mosque of Kairouan in Tunisia to 'rid' themselves of their pains by rubbing them off. The Japanese during their festivals of purification jump through hoops of woven grass to protect themselves from diseases, and the Kamchatkans crawl through wooden rings to purify their bodies and their souls alike. The Christian ceremony of baptism purifies preventively the soul of the new member of the Church.

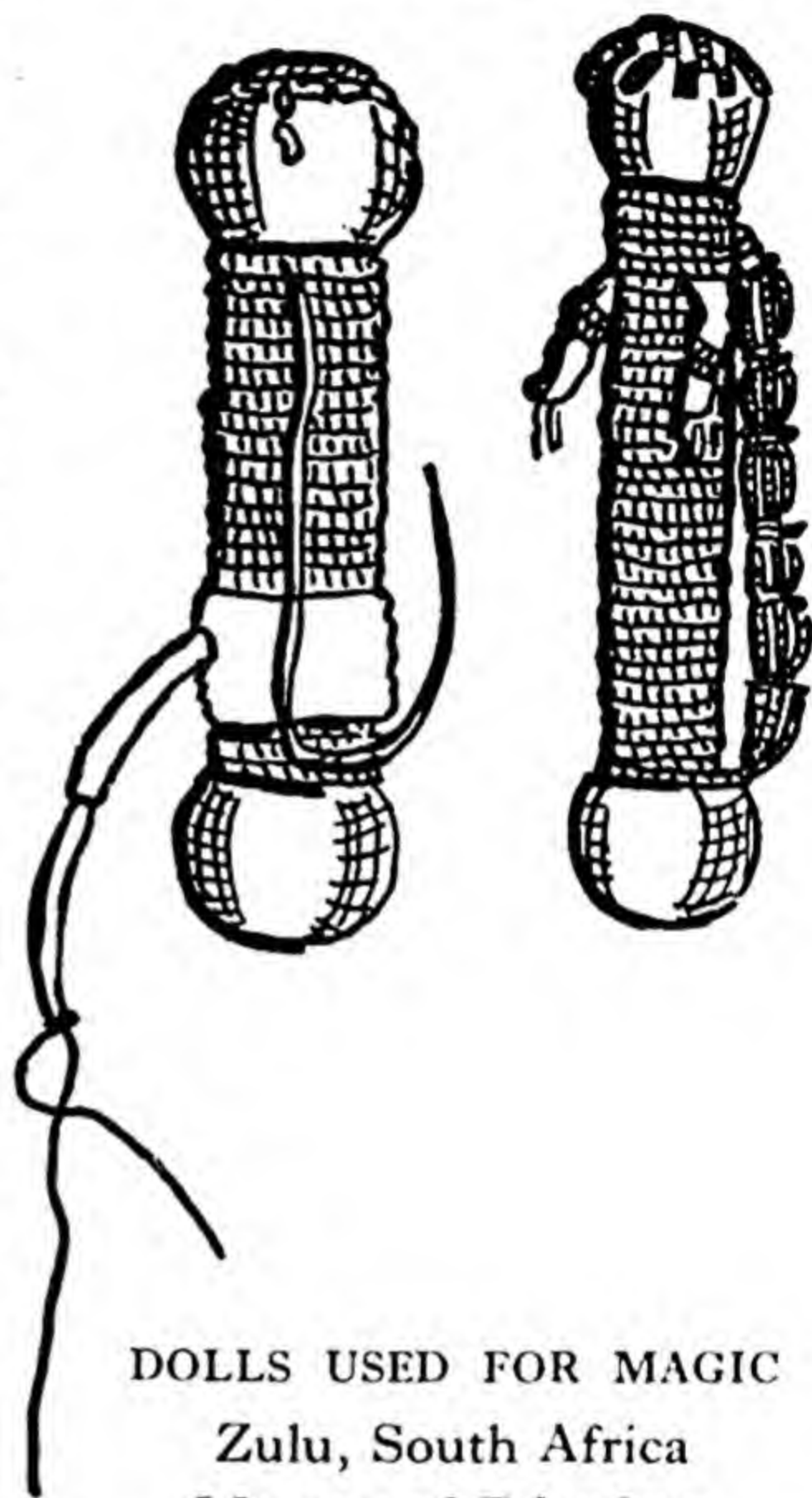
The drawn image of the prey animal, so often the centre of magic hunting ceremonies in the earliest cultures, has its later equivalent in the picture of an individual at whom an act of analogous magic is aimed. The picture of a part of a person or of a thing may be likewise used for magic purposes. Whatever happens to the picture will also happen to its real counterpart.

The action of the girl who symbolically pierces a candle to 'kill' her unfaithful lover follows a similar belief. Her magic would be a genuine example of 'effigy magic' if she would substitute a waxen heart for the candle. Magic actions with the help of an effigy are known all over the earth. On the Malaccan Peninsula small human effigies are formed from beeswax to cast an evil spell over their 'originals.' When an eye of the little figure is pierced blindness will befall the victim; piercing the head causes head ailments; piercing of the waist-line will result in stomach ulcers, and so forth. If death is the desired result the effigy must be pierced from head to toe, and must be treated in all details as though it were the body of a deceased person.

Some American Indians melt down a waxen image to 'kill'

the person in whose likeness it was shaped, or they burn a straw doll representing the victim. The Malays 'cause' marital trouble by tying the figures of a man and his wife together, back to back, so that they 'look away from each other.'

Effigy magic of this type is by no means restricted to primitive cultures alone. It was practised in historic times, and has lived on even in our day. The Romans considered it the logical means of getting rid of an enemy. After shaping his likeness in wax or lead, they destroyed the effigy, murmuring magic formulas to kill the victim. The mediæval custom of hanging a person in effigy still lives on in our time. Even in modern Styria a waxen doll bewitched with the help of mysterious words is pierced with a needle in the region of its 'heart' to cause the illness or death of the original. Rural people in northern England still believe the story of the woman who began to ail until she was a mere bundle of skin and bones. No physician could help her, but when she turned to the miraculous village quack he told her to look for objects that might bring her bad luck. She finally found a sheep's heart, completely pierced with pins. After destroying it, she got well again. The sheep's heart had been used as a magic substitute for her own heart.



DOLLS USED FOR MAGIC
Zulu, South Africa
*Museum of Ethnology,
Cologne*

Corresponding to the active effigy magic, the preventive magic with the help of symbolic pictures or objects has developed. Just as the picture of a person or his heart may be used to injure the corresponding parts of the living body, similar facsimiles may serve to chase the cause of sickness away. In regions where an evil spirit is supposed to have entered a human body, to strike him with an ailment, a figure of this spirit—often in the shape of an animal—is stabbed or shot. The practice of chasing away a scapegoat, as we know it from the Bible, originates in the ancient 'healing' method of chasing away the demon that caused the disease. Only after the development of the conception of 'sin,'

the scapegoat became the medium through which a family or a people was ridded from guilt. On their Day of Atonement the Jews burdened a goat or a bird with all the sins of their people to chase it into the desert. The Badaga of India 'load' a young steer at a funeral with all the sins of the departed, and drive him away with much noise.

Where ailments are understood as a punishment inflicted by the gods, a picture of the sick person or of the sick part of his body is dedicated to the divine power in the hope that he may take away the curse. The votive sacrifices of the Catholics originate in this belief. Whole figures of all kinds of materials are dedicated to the saints, or hearts, legs, feet, arms, and the like are laid on the altar to cure the limbs and inner organs of the sick. Heinrich Heine has described this pious faith in his poem "The Pilgrimage to Kevelar":

Who sacrifices a waxen hand,
Will cure his manual wound—
Who gives the Saints a waxen foot
Will heal his ailing limb.

In Bavaria life-sized heads are shaped from burnt clay by the sufferers from chronic head diseases. Filled with barley, they are hung up in trees passed by a holy procession. In miraculous places like Lourdes the crutches and the braces of the healed fill, as gifts of gratitude, whole chapels, and in the beautiful church of Notre Dame de la Garde, which towers over the harbour of Marseilles, hundreds of ship models dangle from the arches—the votive gifts of captains whose ships were saved by the Madonna in a storm or who wish to protect their vessels by magic means before they sail on a long trip.

A variety of this pictorial magic is the belief that the shadow of a living being is a part of him or even his soul. If an alligator 'catches' the shadow of a Basuto Negro he must die. On the Solomon Islands a man who steps on the shadow of the king is punished by death; and in the Malayan archipelago the piercing of a man's shadow causes his illness. An ancient Swabian law granted satisfaction to a freeman who had been insulted by a serf by ceremoniously hitting the shadow of the offender in the neck.

The widespread reluctance to have one's picture painted or one's photograph taken goes back to the same root. Many primitives believe that the man who owns the portrait of another man has thereby magic powers over him, and in the Casbah of Algiers it is still to-day a hazardous endeavour to photograph the picturesque surroundings and their inhabitants. The artist Kane, who painted

an Indian chieftain, was afterwards solemnly questioned whether he had not planted the seed of the chieftain's possible illness, and when his model was finally consoled with a gift of tobacco he remarked that this was too small a gift for having risked his life. The harassed painter finally made a copy of the picture, which he publicly destroyed as the alleged original, to appease the feelings of the worried tribe.

In the belief that the portraying of an individual would do harm to his soul, Mohammed forbade all pictorial representations of human beings. For this reason his mosques have remained pictureless up to the present day.

The name of a person has the same magic qualities as his shadow or picture. The citation of spirits, demons, or deceased persons is often accomplished by the mere pronunciation of their names, often in repetition, as in *Faust*: "You have to say it thrice." The fear that the knowledge of a person's name might expose him to acts of magic revenge has led certain Australian tribes to the custom of giving names only to children who are too young to have enemies. As soon as they reach puberty the individual name is dropped and they are merely referred to as father, brother, uncle, and so forth.

In Gippsland, a south-eastern region of Australia, personal names were a strictly guarded tribal secret, so that no outsider could harm their bearers by evil magic. Most American Indians refrain from mentioning names, and merely move their lips in the direction of the person they speak about. Sometimes a nickname is substituted for the real one, to protect its bearer—a custom very frequent among our own modern criminals. In Abyssinia no wizard has power over a person whose real name he does not know. To many tribes the mere mentioning of their chieftain's or ruler's name is taboo, and in Borneo the name of a sick child is changed to give it a new lease of life with a new name.

Closely related to the name-magic is the word-magic in general. The threatening gesture towards an absent enemy is often intensified by a spoken curse, or by the words "You shall die," or "I kill you!" When the symbolic action is dropped altogether and the verbal threat exclusively is substituted for it the power of the word-magic appears in its strongest form.

All solemn declarations, oaths, and curses go back to this root, and even our courts of law add the "So help me God!" to the testimony of a witness. The so-called ordeals have the same origin: God or the supernatural shall decide in a public test

whether or not a man spoke the truth and is or is not a criminal. During an ordeal the guilty or innocent individual must hold a dangerous object, eat or drink poison, or walk through fire, to prove his alleged innocence. The outcome decides his fate. Sometimes the 'poison' drunk at such occasions is in fact harmless,



MAGIC STAFF

Batak, Borneo

*Museum of
Ethnology, Cologne*

and only the guilty conscience and the firm belief of the tested in the miraculous qualities of the liquid give him away. Where real poison is used, vomiting is taken for a proof of guiltlessness; the guilty criminal, unable to spit out the deadly drink, must die.

The written name of a person may be used in the same way as his picture or his spoken name. To increase the magic powers over an effigy to be bewitched, the Hindus write the victim's name on the moulded figure; and the Balinese doom a man by writing his name on a shroud or bier which they bury in his stead. The name of a man, written on a piece of paper, may be symbolically hanged or burnt to destroy its bearer. A combination of the writing of holy or unholy names with the use of magic objects developed the amulet, the talisman, and the good-luck charm. All over the Mohammedan world we find the custom of carrying mystical phrases, Koran quotations, and other written symbols on scraps of paper in little bags used as good-luck charms or talismans.

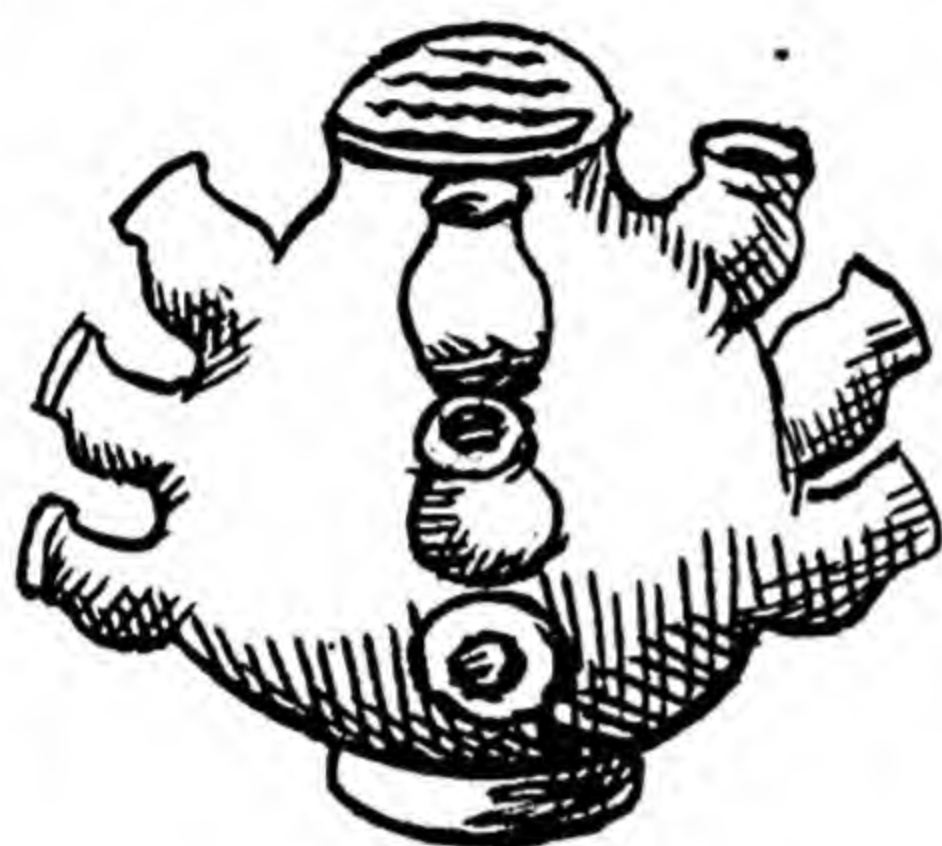
A native of Upper Guinea once displayed proudly his magic amulet to a white explorer: it was a piece of paper warning in German script that its owner was the greatest rogue of the region.

To increase the power of the written word, the Mohammedans sometimes dissolve the writing in water to drink it, or they drink water from a metal bowl in which the magic word or sentence is engraved. When the medical prescription cannot be quickly obtained the Chinese doctor writes it down in ink which is dissolved and drunk by the patient, or the prescription is burnt and the ashes are eaten by the sick man. Among the Japanese it was customary to write the words of a solemn oath on paper, burn it, and eat the ashes. If the swearer was a liar the ashes would act as a poison to kill him.

Other powerful magic contrivances consist of substances taken

from a person to cast an evil spell over him. Such things as nails, hair, saliva, and even shreds of garments, parts of weapons, etc., are considered to be parts of the individual, part of his spirit or soul, which can be dealt with as though they were the person himself. The distribution of this custom is world-wide.

On the Moluccas one kills an enemy by collecting his discarded betel plug, some of his hair, and a shred from his garment, and distributing this mixture in three bamboo cylinders, one of which is buried under a coffin, the second buried under the steps of the



FETISH POT
West Africa
*Museum of Ethnology,
Cologne*



AMULET, CARVED
FROM HIPPO-
POTAMUS TUSK
Manyema, Congo
Lindenmuseum, Stuttgart

victim's house, and the third thrown into the sea. This is supposed to kill him unfailingly.

From this magic belief developed the custom of destroying immediately all such possible tokens of witchcraft. If the Mua-tajamwo, a mighty Central African ruler, spits, a slave immediately buries the evidence, flattens the soil over it, and makes the spot indistinguishable. The South Sea chieftains are constantly followed by an attendant carrying a spittoon whose contents are secretly disposed of.

In southern Bohemia it is still regarded as dangerous to leave dust or rubbish before the house because witches may learn from it what is going on in the house and do their evil planning accordingly. In Moravia cut-off hair must be burnt; in old Scotland discarded hair and nail parings were always burnt.

Since magic with discarded personal substances is considered the cause of many ailments sick people try to buy back these substances from the alleged wizard. On the New Hebrides the

medicine-men earn a comfortable living by collecting all kinds of rubbish to sell back to its owners. On the island of Tana all natives carry small baskets, in which they carefully collect their scraps and destroy them by 'drowning' when they pass a current of water. In Australia the Narrinyeri men try to get hold of as many bones as possible from which other persons have eaten the meat. In this way they gain power over the fate of their fellow-tribesmen, and if one of them should become an enemy he can easily be dealt with by magic means.

The many believers in love-magic, which is practised all over the world, often make similar use of belongings or bodily substances of the beloved to force him or her to return the feelings of the forsaken. Most often such substances are tied into a small bundle and made even more effective by magic adjurations. How such magic is performed, for instance among the Hopi Indians, has been described by Beaglehole :

A man who ardently desires a certain girl steals some of her hair, her saliva, a piece of her shawl, or some threads from her woven belt. These objects, together with a prayer feather, he ties up in a package. He prays that the girl will desire him, and puts the package in his pocket or under his belt. The girl becomes "on fire under her navel" and as long as he carries the package she visits him every night. This love-magic is dangerous. The girl and the man may go mad with love and kill themselves. The bait objects are disposed of by burial when the man becomes tired of the girl: he makes a new package if he desires another mistress.

A quaint form of personal magic is the use of the tracks left by a person in walking or sitting on the ground. Such tracks may be dug out and dried in a container—as the soil fades, so also fades away the health of the victim. The Malaysians shape the soil of the tracks into figures, which they roast or 'kill.' This type of magic is also used by lovers who want to force the objects of their affections to return their feelings. Girls of the southern Slavonic countries dig up the earth from the footprints of their non-responsive sweethearts to plant a 'fadeless' marigold in it. Like the flower, her lover's affection will now bloom and never fade.

The magic world-view is most strongly developed in the oldest forms of human culture. Among the agriculturists it recedes in favour of a strongly accentuated belief in the powers of the dead and their souls, to reach a new height in the ancient high cultures.

In our own civilization the atavistic faith in magic powers is

still of marked prevalence, despite all modern scientific achievements. Especially in times of great danger and great emotional stress, the world-view of the primitive captures a percentage even of 'enlightened' minds. During the Second World War many soldiers in shell-holes and cockpits clung to the encouragement provided by some kind of lucky charm or amulet. The type of objects chosen for this purpose was closely related to the magic contrivances cherished by primitive man.

Although we find even in the cultures of the hunters and food gatherers a belief in the powers of the spirits of the dead and the notion that the deceased continue to exist somehow and somewhere this belief is not yet strong enough to shape the philosophy of these cultures and to prevail over the purely magic element. This occurs only in the cultures of the agriculturists. Their form of economics and their settled form of life which permit no physical and spiritual escape from 'hostile' powers put the worship of the dead into the centre of their world-view and of their entire lives. To the primitive mind there is nothing natural in the phenomenon of death. It is an event brought about by some kind of magic. A mystical power, stronger than that of the deceased, has succeeded in subduing him, and has robbed him of his capacity to live.

Our term for this power of life which is present in the living body and which leaves it at death is the soul. Although the conceptions of its intrinsic properties and its location are among primitive men heterogeneous indeed—it may be identified with a man's breath or bodily warmth, his heart, blood, brains, liver, kidneys, his shadow or reflection—it is always the something which enables him to be alive. That this mysterious being, this soul, is not inseparably connected with the body seems to be proved by the phenomenon of the dream. What else could dreams be but the adventures of the soul on its independent excursions, while the body is asleep? It is, therefore, taken for granted that the soul has the capacity of existing outside the body.

The logical conclusion, then, is that at the moment of death the soul leaves its body permanently. Wherever people believe in a land of the souls, they often answer the question of the cause of death with the assertion that the soul has grown tired of the ways of the world and therefore has separated itself from it. This, however, is a secondary interpretation. In the beginning, only magic influences are believed responsible for the separation of body and soul. These magic influences are the results of witchcraft. They are crimes committed by others, and many

practices and customs have been developed to identify and to punish the guilty sorcerer.

What, now, are the activities of this emancipated spirit or soul? Where does it go? Very widespread is the belief that it dwells in the shape of a shadow near the grave—although often only for a limited time—or that it moves about within the tribal territory, just as the living do. As a parallel conception we find, even in the



MAGIC BUZZARD SKIN
WORN BY ZULU (NATAL,
SOUTH AFRICA) AS A
MEANS OF ACQUIRING
POWER AND INFLUENCE

After Carl von Hoffmann

earliest cultures, as, for instance, among the Central Australian tribes, the idea that the souls move on to a clearly defined place reserved for them. When a child is born one of the old souls has left its refuge to enter the body of the mother-to-be. When the child grows up and later dies his soul simply returns to the land of the spirits of the dead whence it may or may not return in further rebirths. This ancient belief in a round of rebirths, found even among the most primitive peoples, is the germ cell of the conception of reincarnation which reached its highest development in the Indian high culture.

A variety of additional conceptions further amplifies this old idea. When a man has been killed by an alligator or tiger his soul lives on in these animals. If he drowns he transforms himself into an aquatic spirit; if a plant grows on his grave the soul of the dead body beneath lives on in it. Worms that appear near the corpse, or butterflies, bugs, dragon-flies, birds, or, especially, lizards and snakes, may be regarded as the new incorporations of the soul. The dying individual may even choose the type of creature in which he desires to live on.

Very often a clear distinction is made between the status of the soul before and after the burial of the body. As long as no funeral has taken place, the soul remains near the body as a threatening ghost, and may even appear to the living in many dreadful disguises. In places where two successive burials are customary the soul dwells near the body all the time until the final rites have taken place. A person who for some reason received no formal funeral at all will be condemned to a permanent existence as a restless ghost who haunts the living. Only a final and orderly

funeral delivers the soul, so to speak. The soul is now free to travel to its home—the land of the souls as the tribe in question conceives it. Sometimes it is identical with the land from which the ancestors came, and which, long ago abandoned by the migrating tribe, nevertheless still is their home.

Often the location of the land of the souls is directly connected with the course of the sun. The sun-god is the guide who leads the souls of the departed to their new dwellings. On the Solomon Islands they enter the ocean together with the setting sun. This conception is closely related to the belief that the sun is born while rising in the morning and dies in the evening. Because there were no living beings on earth prior to the sun he was the first to be born and the first to die. A Polynesian myth closes with the thought that if Maui the sun-god had not died the humans who came after him also would not have to die.

The sun sometimes may actually be the cause of death: the sun-god spears the mortals from heaven with his rays and pulls them up to his land. Or he catches them with the net of his rays and kills them afterwards with his spear. If the sun is imagined as a spider in its net of rays it is a sorceress who catches the humans in this net to devour them. For this reason the Mexican death gods are symbolized by spiders. Where the sun-god climbs on tows or ladders into the sky (symbolized by his rays), the same path is followed by the souls on their travel to their heavenly dwelling-place. This is the origin of the ladders in Jacob's dream on which angels climb up and down—angels being the personified souls of the dead. In New Zealand vines lead down to Havaiki, the land of the souls, and on the same vines the souls of the ancestors once climbed up to earth. In the old Congo Kingdom the sun priest was not allowed to die an ordinary death, but had to hang himself on a rope up which he could climb to the sun.

A bridge may lead to the sun, or a boat or canoe comes to transport the souls of the deceased to the better land of the sun. Charon, the Greek ferryman, whose boat brings the souls of the dead to the nether world over the Styx, is of the same origin.

Not only bridges or boats may carry the souls to their new domicile; animals and, especially, birds may call for them to guide them to the land of the dead. From this idea the conception that the soul itself is equipped with wings has developed. Ancient Egyptian representations show clearly the interjacent stage of development in which the human figure and the forms of birds are combined in one being. The falcon god Horus of ancient

Egypt is of a definitely solar character ; Horus was the typical title of all kings of dynastic and pre-dynastic times. Their powers centred in the sun city, Heliopolis, whose ruler the king was known by the title of Harachte ("Horus who lives in the horizon"), and the combination of bird and sun indicated his supernatural powers over men and souls. In the Christian conceptions the wings of the soul bird have become the attribute of the angels.



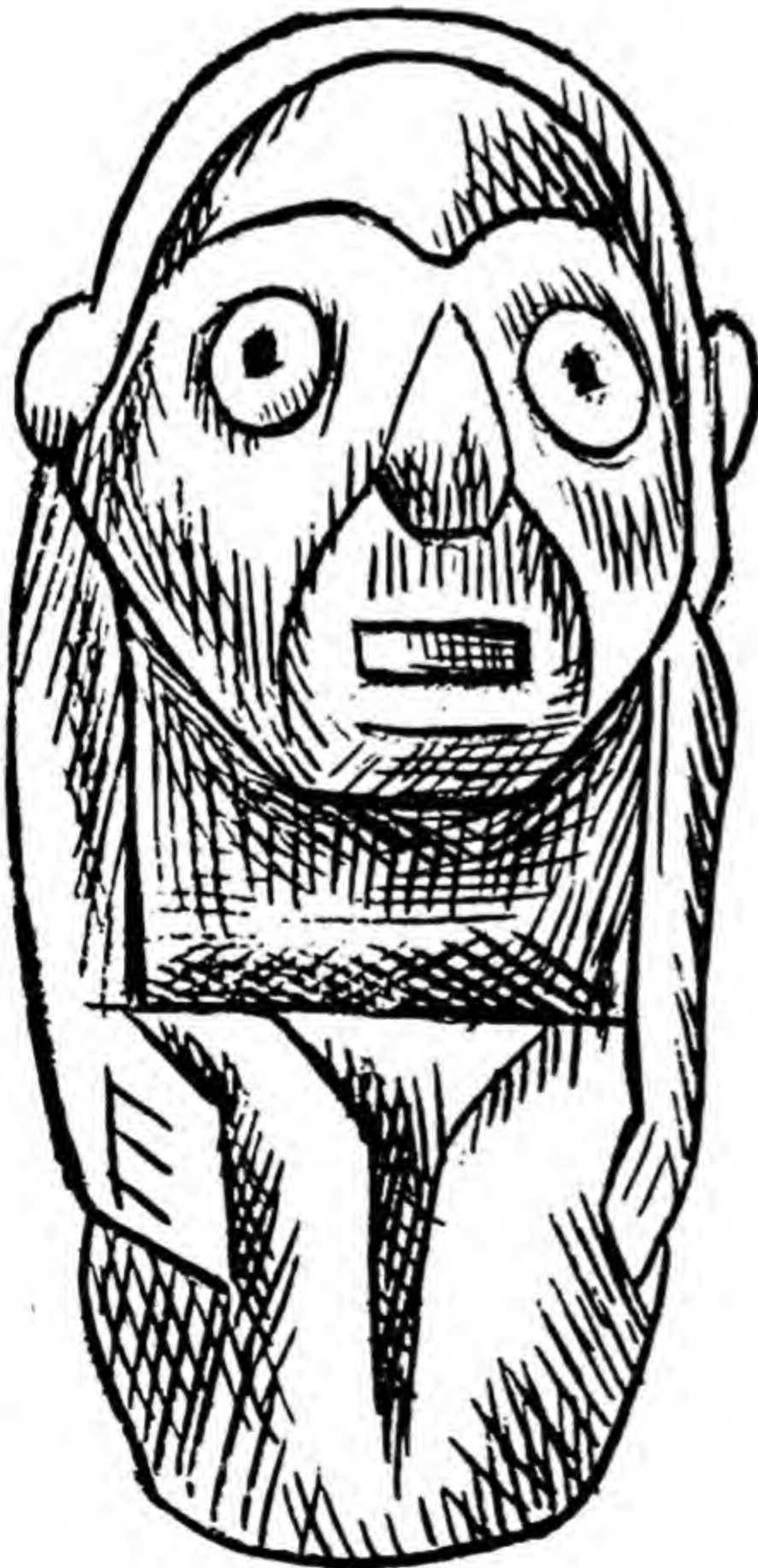
KOPPENSNELLEN

New Guinea

After Chalmers-Weule

reminder of this idea, we still tell small children that babies are

ANCESTRAL FIGURES .



Haiti



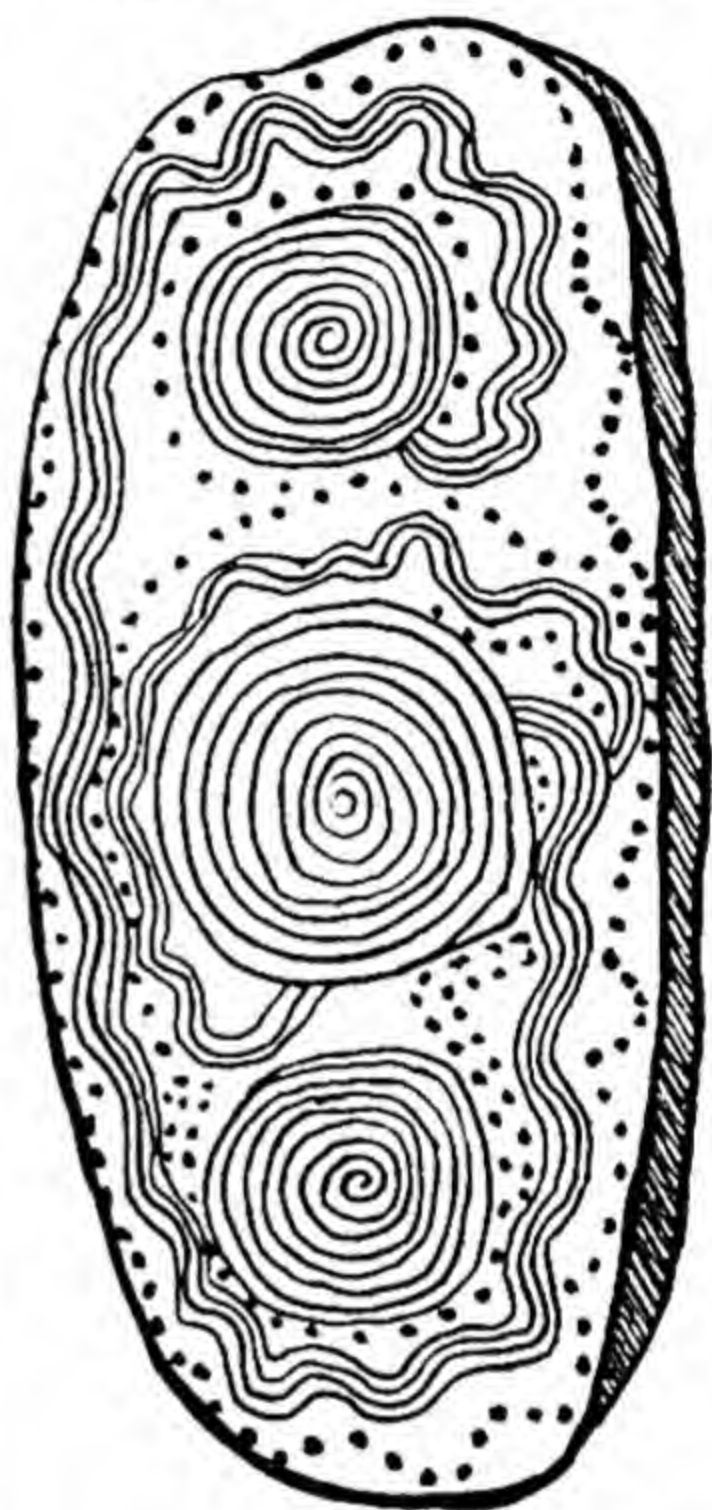
Indonesia

After V. Sydow

brought by a stork and that he fetches them from a pond or lake. In many ancient lands the sun rose from the waters, and the stork, on account of his red legs, is believed to be connected with fire and thereby with the sun.

Closely related to the different conceptions of the travels of the soul are the many forms of primitive burials, all of which originated either in the ancient fear of the spirits of the dead or, as among the agriculturists, are influenced by the effort to make fruitful use of the powers of the souls for the benefit of the surviving community. By noise or ruse the souls are tricked into the abandonment of their 'evil' intentions, or they are bribed with food and presents to stay where they are and not to return to the living. In later cultures this idea has led to the custom of burying not only clothing, weapons, and ornaments with the dead, but having them accompanied by the souls of pets, riding and pack animals, and even slaves and women killed in their honour during the funeral ceremonies. As many human beings as possible were killed to please the departing soul, so that his spirit would not feel lonely and would not desire to bring suffering to the living.

Since all souls are believed to crave company it seemed wise to choose their fellow-travellers in advance instead of leaving this choice to them. To protect themselves from this desire of the soul, some tribes kill prisoners of war or strangers whom they treacherously overwhelm. This is the origin of the ill-famed custom of the Koppensnellen in the East Indian Archipelago. Koppensnellen victims are unsuspecting honey-seekers or visitors to the water-place, killed by insidious attack from ambush. All such actions are inspired by the desire to satisfy the soul before it feels any inclination to act. Since the closest relatives are most likely to be the victims of the soul's thirst for revenge, and since they may infect others with the contagious danger, they have to live in seclusion for a certain period, after which they often have to undergo a special ceremony of purification to make sure that they are again completely free of the 'poison of death.'

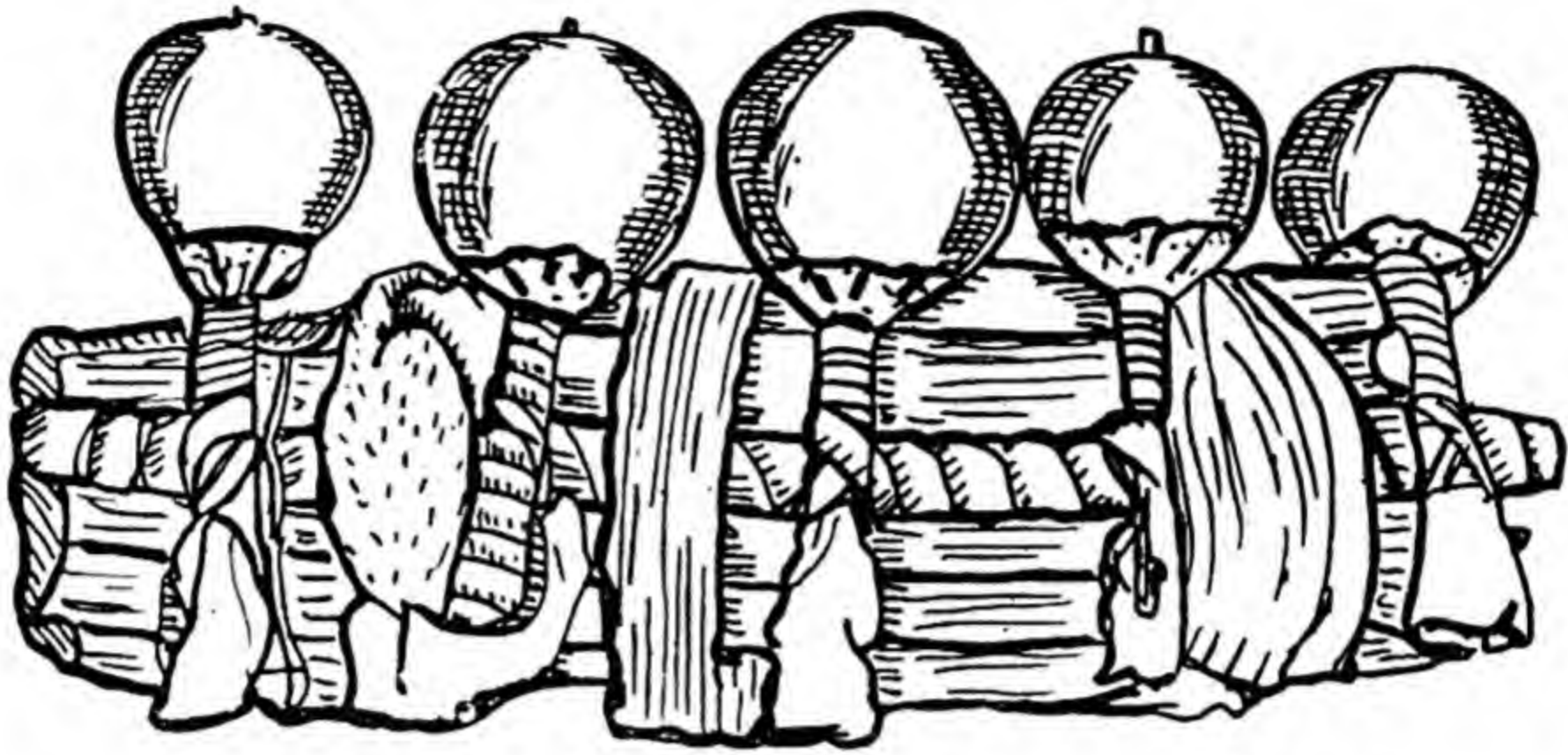


TJURUNGA OR SACRED
STONE

Arunta,
Central Australia

After F. D. McCarthy

Another preventive measure is not to mention the name of the dead since, as previously observed, the pronunciation of their names would cause their dreaded presence.

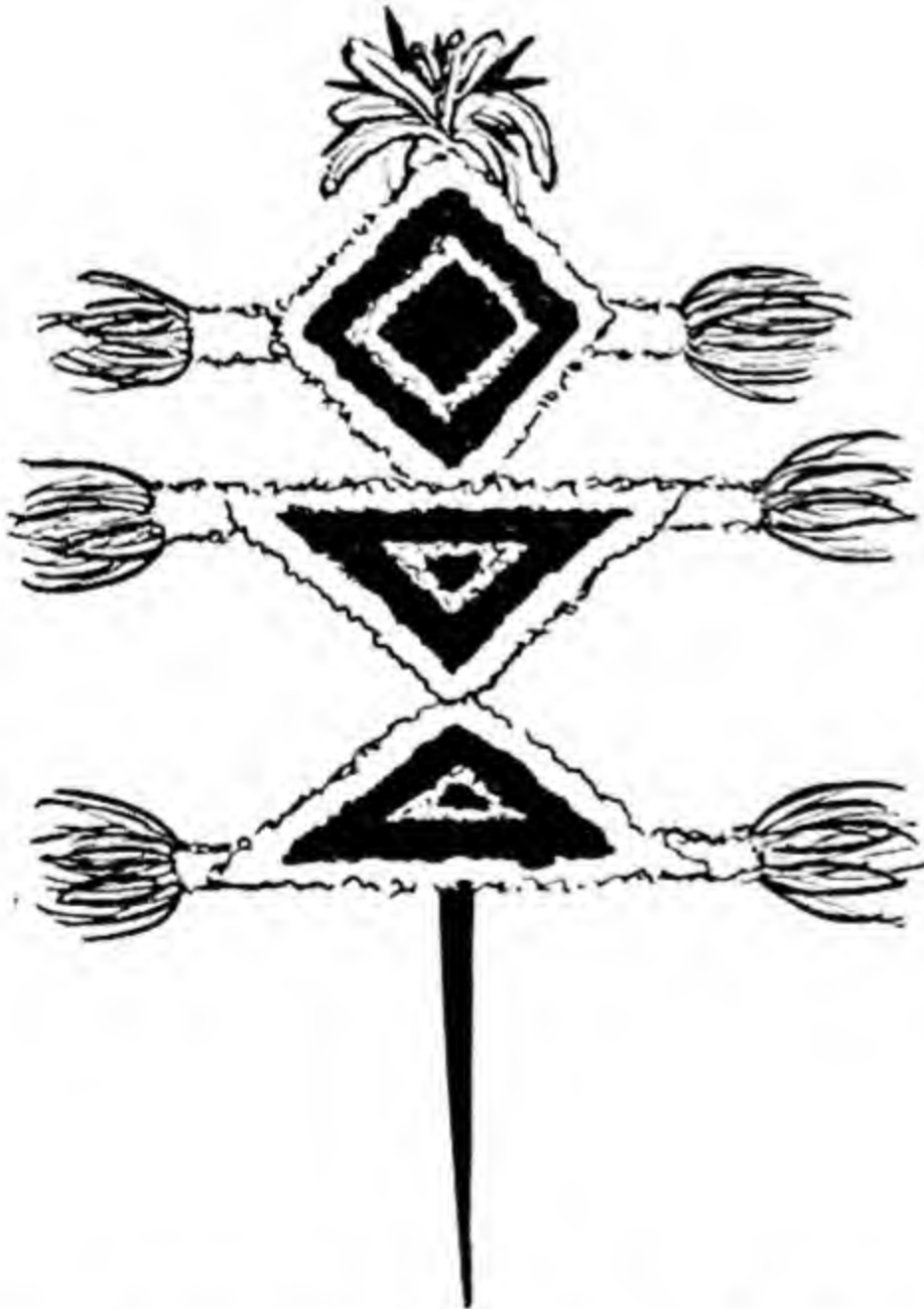


MAGIC TRIBAL BUNDLE OF THE PAWNEE

Oklahoma

*After a photograph, American Museum of Natural History,
New York*

The belief in the extremely strong power of the souls of the dead developed from the fear of the dead, and has caused the living to



SACRED WANINGA OF THE
SPIDER TOTEM

Arunta, Central Australia
After F. D. McCarthy



FETISH FIGURE

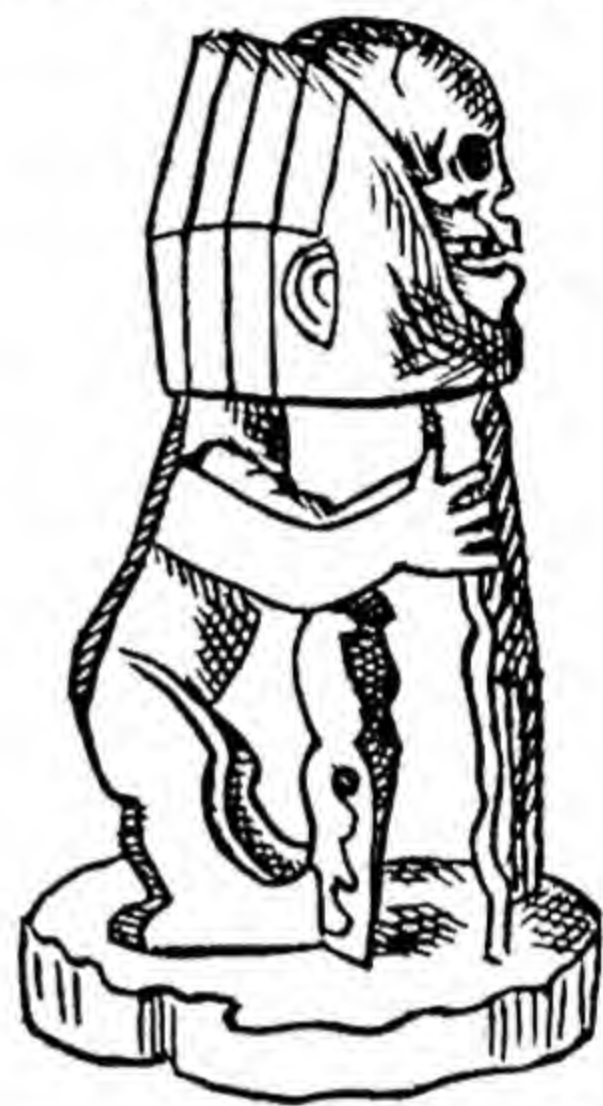
Western Congo
*Museum of Ethnology,
Cologne*

desire to benefit from this power, just as from other powers of nature. This could be achieved by keeping the souls of the departed as closely by as possible, yet at a prescribed spot. The images of ancestors serve this purpose.

In Central Australia certain flat-shaped pieces of wood or flat stones that represent the soul of a man or woman are prepared for him immediately after his birth. Each native has his own soul-wood or soul-stone, known by the name of *tjurunga*. Although the spirit of the dead itself returns to another place, the *tjurunga* maintains some of his individual soul substance. For this reason the survivors collect these objects from their ancestors up to the recently deceased and regard them as their most sacred possessions. Whole collections of such ancestral soul-stones are hidden away within the tribal regions to serve during holy ceremonies when all their powers are combined to 'help' during the initiation ceremonies or to obtain an increase of the food supplies. Objects of similar significance are the *nurtanjas* and *waningas* of Northern or Central Australia, respectively. They are structures of spears tied together with human hair and covered with red-and-white feather down, on whose tops some *tjurungas* are suspended for ceremonial purposes.

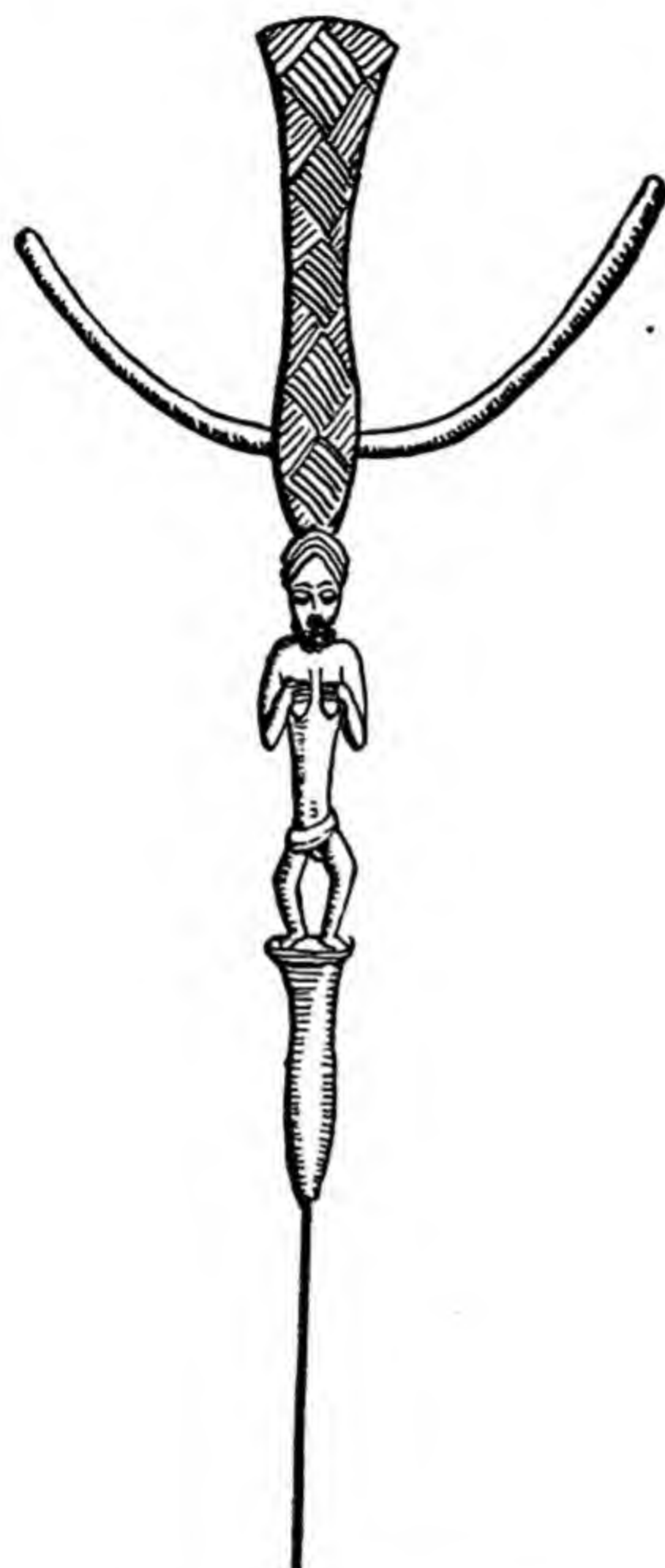
From these soul-woods and soul-stones the ancestral images of the agriculturists developed, a variety of which is the well-known fetish figures. These images of the ancestors are, however, not made during the lifetime or at the birth of an individual, but only after his death. They are not identical with the soul of a living person, but contain his other, his 'death soul.' During the course of development they then assume, besides their religious and magic significance, the meaning of mere tokens of remembrance. Besides the man-made ancestral images, the skulls and the bones of the dead person are worshipped as objects containing 'soul power,' and occasionally both types of fetishism appear in combination.

Since the skull is often considered the seat of the soul it is only logical to procure and to preserve it, especially if it belonged to an outstanding individual like a priest or a chieftain. Skull worship is not restricted to the ancestral skulls alone, but is extended even to any obtainable skull, whether from friend or enemy.



ANCESTRAL SKULL IN
WOODEN 'KORWAR'
Dutch New Guinea
After O. Nuoffer

From the worship of the dead and the cult of the skulls the mask cult, with its dances and performances, has developed. The carved mask now symbolizes the soul, the spirit, or the magic demon. But not man alone possesses such powerful soul substances. In the world-view of the so-called animism, plants and



FETISH SCEPTRE
Urua, Southern Congo



SYMBOL OF THE GOD
OF LIGHTNING
Togo

Museum of Ethnology, Cologne

animals, celestial bodies, hills, and rivers are all endowed by primitive man with souls and spirits equal to his own. Many an African native who sets out to fell a tree pours some palm-oil on the soil after the first blow so that the enraged tree-soul is led away from the 'attacker,' who thereby escapes its revenge. The general custom of the North American Indians of begging the killed prey animal for its pardon originates in the same belief.

The Eskimos explain their attitude towards the spirit of the

killed animal in elaborate detail. They believe that seals and whales who live in the salt water suffer from continuous thirst and that they only allow themselves to be killed because the hunter offers them a drink of fresh water in return. If he ever neglects the ritual of pouring a dipperful of water in their mouths after they have been killed all the other seals will know this immediately, and will not give this unreliable hunter the opportunity to kill them. Polar bears who are not thirsty because they can lick the snow are, however, eager to obtain man's tools, like crooked knives or bow drills, if they are males. Female bears desire women's knives, skin-scrapers, and bone needles. Stefansson says :

Consequently, when a polar bear has been killed his soul accompanies the skin into the man's house and stays with the skin for several days. The skin during this time is hung up at the rear end of the house, and with the skin are hung up the tools which the bear desires, according to the sex of the animal killed. At the end of the fourth or fifth day the soul of the bear is by a magic formula driven out of the house ; and when it goes away it takes away with it the souls of the tools which have been suspended with it, and uses them thereafter.

Eskimo hunters and their wives have to be very careful to do justice to the souls of the killed animals in this way. If they are neglectful their reputation not only among the animals (who will henceforth shun their attempts at killing), but also among the humans, will severely suffer. " Certain women are known in their communities for this very undesirable quality, and if a woman becomes a widow her reputation for carelessness in treating the souls of animals may prevent her from getting a second husband."

As this belief in the 'souls of the tools' shows, even inanimate objects are, in the animistic world-view, equipped with souls, and certain artisans who manufacture them, especially smiths and wood carvers, are mysterious and, occasionally, dangerous persons who may influence the souls of whatever objects they shape.

Even good and bad character qualities are traced back to different spirits dwelling in a human mind, and the sickness demons, developed from the spirits of the dead, run loose everywhere. They take the forms of elves and goblins, and they are fought or flattered by the same means as are considered effective in dealing with the spirits of the dead.

From all these examples we see that the world of primitive

man abounds with invisible spirits and beings which may be the friends or enemies of the living. They all require special attention so that they may be kindly inclined, and their future will may be read and interpreted by the enlightened. The flight of the birds, the currents of the water, the entrails of animals, the way in which a thrown stick falls or an oracle animal moves, can betray the will of the silent and yet so powerful spirits, so that man can direct his actions accordingly. From the belief in such premonitory signs the games with dice and cards have developed; and the 'reading of the future' with the help of cards or tea-leaves goes back to these very ancient conceptions.

The belief in the powers of the souls and the earliest forms of mythology—the analogous shaping of the great powers of nature including heaven and earth after the patterns of the experiences of primitive man—has finally found its highest expression in the belief that supernatural beings exist who are superior to man. The multitude of gods who are throned above the mortals, many of them distinguished by specific functions and qualities, still show in almost every instance the traces of their development from conceptions of earlier cultures.

Many of the outstanding gods of the ancient high cultures maintained in their appearance certain animal attributes. The Egyptian hierarchy of gods, especially, furnishes striking examples. The sun-god Horus, with the sparrow-hawk's head, was the master of the flame-spitting snake, the stroke of lightning, with whose help he destroyed his enemies. Toth, the moon-god, had the head of an ibis; Anubis, the god of the dead, was snake-headed. Often the animal character of the deity is merely maintained in his riding mount, while he himself attains the human form. The Indian god Siva, once an old sun-god conceived as a steer, rides now, as a human-shaped figure, a reddish-brown bull. It is Siva who, as the sun-god, frees the cattle (light) from the stable of the night.

The dance as the oldest form of religious worship has likewise been adopted by many high cultures as a characteristic of the gods. All Mexican gods dance; they are pictured with bells on their feet, and musicians are their constant companions.

The relationship of prayer—especially of the fixed, formulatory variety—to the ancient magic formula is evident. In Tibetan Lamaism, the belief in the effectiveness of magic repetition has led to the use of regular prayer-mills which mechanize the holy formula of the *Om mani padme hum* for the benefit of the pious. The interesting characteristic of such prayer formulas is

the fact that the words used stand in no direct relationship to the wishes of the praying individual, who obviously believes that the formula arouses the attention of the god who, once called in, automatically takes care of the needs of his follower. The Tibetan prayer-mills contain slips of paper on which the holy words have been written. By a simple turn of the attached crank, the prayer counts as 'spoken' and can in this way be effortlessly repeated a thousand and more times. This gadget stands on the same level as the primitive dance rattle, and is only a combination of it with the ancient 'magic sing-song.' Such prayer-mills have assumed gigantic dimensions. Specimens in Japan can be moved only by a group of 'prayers'; and some huge prayer-mills are driven by water or wind power.

ॐ मणि पद्मे हूँ



THE HOLY TIBETAN PRAYER

Om Mani Padme Hum

In different Scripts

After Forstmann

Informal prayers expressed in the manner of a simple demand are equally old. They have been and often still are accompanied by gifts to the spirits or gods to win their friendly inclination. The most ancient conception of the deity is that of an incalculable being who, however, can be appeased or influenced by gifts, sacrifices, or vows. Neglect in making such offerings causes the wrath of the gods. It is up to man to create a friendly relationship between himself and those beyond his visible world. Nobler conceptions in our sense enter the realm of religion with the introduction of ethical yard-sticks and ethical evaluations.

In the different paradises of mankind the tree of knowledge is the same, only its fruits are of different kinds. The conceptions of 'good' and 'bad' are no absolute values: they vary within the different cultures. The 'knowledge,' however, is stable in so far as it determines what is good or bad according to the customs

of the peoples concerned. And God or the gods supervise the observance of the code of morals. The nature of these morals changes from tribe to tribe, from people to people, and is subject to historic development.

Higher cultures have extended the influences of the Deity beyond death, when He distributes, as a matter of justice, reward or punishment in accordance with an individual's ethical behaviour on earth. Only one additional element surpasses even this conception of God : the idea of the forgiving love ascribed to God by the Christian religion.

Primitive man created his gods in his own image. Often they are endowed with human desires and passions, besides having powers which man does not possess. The belief in these powers is founded on faith, just as in the great world religions. This faith led to the belief that the gods created man.

The teachings of the missionaries have partly substituted for or replaced the old powers of magic and the old gods, but unless the whole primitive culture of the tribes in question had been utterly destroyed only such teachings and conceptions of Christianity could be absorbed as fitted into the general world-view of the tribe. In spite of continuous missionary work among primitives, the outcome of the white man's endeavours was only too often merely a mixed primitive-Christian religion of which the festivals taking place during the *Semana Santa*, the Holy Week of the Latin American Indian tribes, are a good example, for here the blending of the new Christian beliefs with the old magic myths becomes evident in unmistakable frankness.

Only such beliefs and gods and faiths as somehow already were parts of their own world were and could be accepted by the minds of primitive worshippers. Again, it was man who created his gods.

CHAPTER FOURTEEN

Each Thing has its Story

EVEN IN THE loneliest wilderness primitive man is surrounded by many heterogeneous spirits whose good or evil forces stand in direct relation to his activities, hopes, and destinies. His neighbours the animals, his friends the plants, his ancestors the stars, his gods who dwell in the sun, in the moon, in the volcanoes, and in the rivers, are around him at all times, and his continuous intercourse with the spiritual forces emanating from them makes his life an exciting experience, marked by never-ending adventures.

Unable to write down this wealth of adventure in holy or worldly books for the generations to come, he relieves his soul by the medium of the spoken word, which assumes in his environment an importance far greater than spoken utterances in the civilized world. The nightly gatherings in the huts, the camp-fires, and the community houses become the centres of spiritual exchange

of an intensity that surpasses the realm of mere entertainment, because here the ancient traditions are related to future generations in narratives which they, in turn, will remember and pass on for the sake of their children and grandchildren.

Not without reason, the ancient tales are often begun or terminated with the phrase, "That is how it came upon us," or, "The old ones told it this way." The myths of primitive peoples are their Bible and their history book, their codes of etiquette and their thesauri, their treasure chests filled with ancient wisdom, shrewd psychology, and, last but not least, laughter and wit. They all have one thing in common: they are 'non-fictional,' and, fantastic as some of them may sound to our ears, they are the factual truth to those who tell them and to all who listen to them.

The mythology shaped and preserved by the minds of the



'THE MAN IN THE MOON'

Haida Indian Drawing

peoples without written history is an ocean filled with pearls—and those we have lifted from its depths are a mere fraction of its wealth.

The principal characteristic of the myths of primitive peoples is that they make no marked distinction between the human being and his natural surroundings—that man and plants and animals, the phenomena of nature, the celestial bodies, the legendary heroes, and the gods, all act on an equal basis and under circumstances fashioned after the patterns of life of the tribes concerned. Ignorant of the physical and psychological structure of the things and beings outside himself, primitive man takes his own inner self as the yard-stick of their nature and attitude, and transposes naïvely his own feelings and habits to the 'feelings' and 'habits' even of things which, according to our conceptions, are inanimate. Material objects, the powers of nature, and plants and animals—all think and act like man, and this is one reason why the tales and myths of the peoples without written history are so colourful, so fascinating, and so picturesque.

The 'elders' of the animal tribes sit together in council meetings, smoking the ceremonial pipe and discussing their problems solemnly for the sake of the animal kingdom; the dog owns a plantation just as his agricultural human brethren do; the porcupine seeks his right in a palaver; a cherished root is dug only after a short address to its spirit; the hunted bear is formally begged for his pardon. The Brazilian Indian hits the 'vicious' stone over which he has stumbled and the arrow that wounded him. The tree from which a man fell to break his neck is ceremoniously cut down; another member of the tiger clan has to die for the 'murder' committed by a fellow-tiger.

Such customs live on even in our time when a dog is held responsible by American courts of law for injuries inflicted on a person; and the Greek court of the Prytaneum sentenced a piece of wood or a stone 'guilty' of a man's death to be thrown solemnly over the border-line of the community land. Our own children scold a chair or table against which they fall, and their conversations with dolls, balls, and other toys go back to the same root. The Bushmen of South Africa believe that ostriches go hunting with bow and arrow; and the Australians whisper important and confidential news to each other for fear some animal might be eavesdropping and indiscreetly spread the secret all around.

The great phenomena of nature, day and night, sun and moon, thunder, rain, storm, and the like, are, to primitive man, the

utterances of spiritual beings, and they are persons like man. The sun goes hunting; the moon catches herself in a trap; the clouds are smoke from the pipes of the gods. This attitude is still reflected in the expressions of our own language. To us, the sun 'rises,' 'shines,' 'sets'; the wind 'blows' or 'whistles'; the storm 'howls'; the snow 'falls'; the water 'stands' or 'flows'—all these attributes are used in a way as though they described the activities of living beings. The terms of our modern physical science make use of such analogies. We reckon in 'horse-power' units; speed 'increases'; and even the atom 'divides itself' until it is 'smashed' by the superior powers of nature (in the universe) and of man (in uranium).

The living spirits 'hidden' in the 'bodies' of the forces of nature assume, in the primitive world, all sorts of shapes. On the American North-west coast thunder is created by the thunder-bird, whose flapping wings make the rumbling sound and cause the stormy winds. Four brothers of the Tlingit tribe, enraged over the fact that their sister disgraced them by having intercourse with a snail, turned into the Thunders. "When they move their wings you hear the thunder, and when they wink you see the lightning."

The Alsea, a vanishing tribe of the Pacific Coast, take their precautions when the Thunder is around and try to appease him with the words: "Dodge thyself, my friend!" When he threatens to rend the house they dance and hit the house with sticks in his stead, and turn over their water-buckets to please him. When the storm reaches its climax an old man stands up and says suggestively to his people, "The world is not doing anything wrong; nature acts thus just without any bad cause."

In the African Pangwe country lightning is 'a black ball' which leaves its 'excrements' on the trees it hits in the form of resin, which is worshipped as holy.

Among the Bamum and Tikar of the Cameroons there are three kinds of lightning: 'the axe,' which splits the trees; 'the white monkey,' which destroys the plantations like a monkey; and 'the cock,' which kills thieves. In Australia the complex earthquake - thunderstorm - rain often goes back to one single source of origin—a snake of human appearance but with dwarfed legs and arms, which dwells in a cave and shows itself to the mortals in the form of a snake, eel, or leguan. Earthquakes may be caused there by the killing of a sacred snake. After a woman married To Uvalun, the volcano snake, she gave birth to a son who moved into a mountain where he sits and smokes, spitting

fire and stones over the region. The earthquake snake is invisible to men, a gigantic being with a cock's comb on its head.

The sun may be a god, a hero, a mere man, or a burning stake. Its rays are arrows thrown to earth by the sun-god, or fishing-lines on whose hooks the earth is lifted from the oceans. Or the sun may own two houses, one on earth, the other in the skies, between which it makes its daily journey, as in the Zuñi country.

The moon may be a man, a hero, a god, or a woman. The lunar mountains especially have been explained in many mythical ways. The 'man in the moon' may be a man, a girl, a toad (at the Rio Ataguaya), or a frog, as in some North American legends. The eclipses of the sun and the moon are caused by animals eating them. ("Grizzly bear eats," say the Klamath during an eclipse.) A frog, enraged by the fact that the sun eats his children, gives chase to it and eats it during an eclipse, say the Maidu of California. In the Alsea country "the crow usually kills the moon, and also the eagle, and likewise the chicken hawk and the owl. All the birds habitually assemble whenever they kill the moon"; but "even if the moon should disappear, nevertheless he will again fix his own appearance just as it was before." When the sun is being 'killed' during an eclipse a burglar is after him on account of his large treasure of *dentalia* money shells, and all buckets of the Alsea must be upset, "because it is not desired that the water should become bloody whenever the sun is killed." The Zuñi moon is "reborn each month, and in fourteen days reaches maturity; after that her life wanes."

The sun may also be a white horse which, in higher cultures, serves as a riding animal of the sun-god—a belief which is the origin of the sacrifice of horses in India. An ancient ritual still customary in Hanover, Germany, goes back to the same conception. At Christmas time a strong young villager rides on a white horse through the streets, collecting gifts from the householders. He is the returning sun-god, who receives the presents that replace the ancient sacrifices. The St Stephen's ride made on December 26 on horses over many European fields to ask the returning sun for the fertility of the coming harvest is of the same origin, and Father Christmas, or Santa Claus, who in many countries follows or precedes the Christ Child in the Christmas parade, is nobody else but the old sun-god.

In the beginning of time heaven and earth were not separated from each other, and most stories of primitive peoples dealing with the creation of the earth give detailed descriptions of the lifting of the heaven from the earth. Old Father Nainuema

created the Uitoto world in a state of meditation ; smoking and dreaming, he took the empty ground, tramped it with his feet, and then separated the heaven from the earth. The Zuñi describe this earliest state of the world in the customary introduction of their olden tales : " Long ago, when the earth was soft . . . "

In ancient Egypt, Shu, the sun-god, separated the heaven from the earth ; and some of the old pictorial records of this event show Geb, the earth, as a man over whom Nut, the heaven goddess, stands, both supported by Shu, their mutual father. On the body of Nut the gods travel in their boats.

The idea that the sun travels in a boat over the ocean of heaven is familiar to many peoples on earth. But since heaven and earth seem to grow together at the horizon it is often believed that their daily joining and separating take place in the West, and that the sun must pass the small crevice between them every evening. This being a dangerous undertaking, the sun is often harmed or wounded while sneaking through ; and his tail or leg is squeezed off. The Greek myth of the Symplegades, two rocks that open and close, goes back to this belief. The Australian sun-god has only one good leg ; the other one, a stump, has been mutilated during the travel. The Mexican sun-god is equally crippled, and some of the old *codices* show him with blood streaming from his left stump. But here the rocks are replaced by a fish, a conception that leads to a combination of the saga of the Symplegades with that of a fish who eats the sun at night to spit it out again in the morning—a story known to us as the Jonah myth. It is the ancient myth of the setting sun which is 'eaten' by the darkness of the night and 'spat out' again in the morning when the ball of light emerges in new glory.

The North-west American Haida, whose story of the whale that swallowed the raven (the latter is their mythical personification of the sun) gives their version of the sunset and sunrise, like to paint the story on their sacred objects.

The African Zulu have the sun swallowed by a monster living in their river, and it 'dies' when the sky takes on a flaming red colour—the evening glow. Where there is no ocean or huge river, the sun is eaten by an elephant or a wolf. The story of Little Red Riding Hood is nothing else but another version of the Jonah myth, the red cap on her head being the setting ball of the sun, the wolf being the night. Where a gigantic snake takes the part of the night that swallows the light of the day, it develops gradually into the mystical dragon monster which, in China, fetches the sun from the sea. The Emperor of China, son of the sun, sat

on a golden dragon throne, and his banners showed the dragon with the red-glowing ball of the sun.

In the myths of many peoples life on earth began on the day when the sun emerged for the first time from the nocturnal belly of the fish, the land monster, or the box in which it swam in the ocean—and together with the sun appeared all living creatures who had fled into the box or boat to escape a great flood ; in this we recognize the Ark of Noah, whose ancestor was the ancient sun-god.

The story of the great flood belongs to the oldest myths of mankind. It appears in the stories of India, Persia, Greece, and the Nordics ; the Mexicans knew it, and it is told by the arctic and subarctic hunters, by the peoples of North and South America, Melanesia, and elsewhere. However, the old assumption that its distribution is world-wide has been refuted by modern science. It does not appear in China and Japan ; it cannot be found in the Buddhist scripts or among the Egyptians and the Arabs. The Chaldean record of the great flood and that of *Genesis*, however, dates back to 2000 B.C.

The different variations of the story of the great flood belong to the most fascinating manifestations of human imagination. Volume after volume has been filled with it by scientists who never ceased to be attracted by this tale, which is so often chosen by primitive man as the logical explanation of the origin of life or the survival of living creatures after one or more previous 'ends of the world.' To pick just one example from hundreds, the version told by the eastern Athapasks follows in abbreviated form.

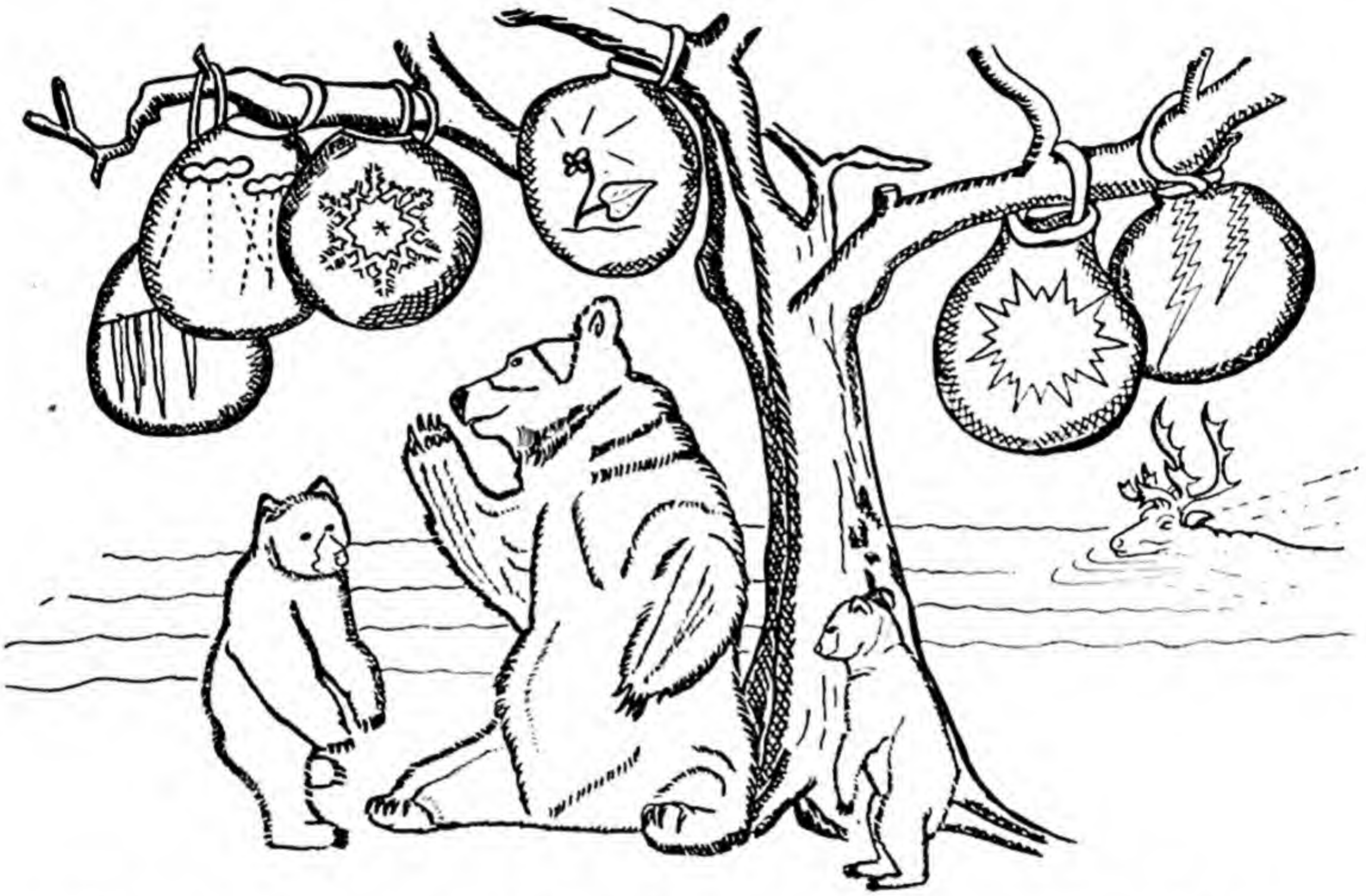
THE STORY OF THE GREAT FLOOD ¹

In the beginning, people lived on earth just as to-day. But some winter, something extraordinary happened : snow fell in such huge quantities that the whole world was buried under it and that only the tops of the highest pines stuck out from under the blanket of snow. All animals who then lived among the humans hurried towards the sky to look for warmth. The squirrel who was fastest climbed the top of the highest pine-tree, drilled a hole in the sky, and entered through it the heavenly regions. This hole is the sun. All other animals hurried to squeeze themselves through the same hole, whereby the squirrel came so closely to the source of warmth that its pelt was singed ; that is why it is still red even to-day.

The bear who was the overlord of the upper regions did not like the idea that the light from Heaven now streamed down to earth,

¹ Adapted from Petitot.

and he covered the sun-hole with skins, so that it was dark again in the cold world. The bear and his sons collected all the warmth of Heaven in a huge leather bag and hung it up in a high tree in the upper regions where in other bags the other weathers were stored: there was one bag with rain and one with snow, one with nice weather and one with storm, one full of cold, and now the one containing the warmth. The bear and his sons lay down under that tree to guard the bag that contained the warmth, and he said to the



There was one bag with rain and one with snow, one with nice weather and one with storm, one full of cold, and now the one containing the warmth.

other animals, "Don't you dare to steal it!" And who among them was strong enough to fight the powerful bear? They almost despaired. The reindeer who knows how to run fast offered to try his best. He swam toward the bear (the tree he guarded grew on an island of Heaven), and grabbed the bag containing the warmth before the bear could hinder him. The bear fetched his boat, but when he began to paddle, his paddle broke, because it had been secretly hollowed out by the mouse as his contribution to the common good. This gave the animals a chance to get away with the bag. It was very heavy, and they carried it alternately, suspended from a beam. On the long road between Heaven and Earth they had to rest every night. One evening when they got ready to camp the mouse, whose shoes were walked to shreds, cut a tiny piece of leather from the bag to mend them — and this unfortunate act

caused the great accident. The warmth streamed from the hole with such terrific power that the gigantic blanket of snow which covered the earth was melted down in a matter of seconds and turned into a horrible flood that rose and rose until it covered even the highest mountains.

An old Indian with white hair had foreseen this event and had warned his fellow-tribesmen of the moment when the snow would melt. "Let us build a large canoe to save us," he had said, but they had laughed at him. "If there should be a flood," they said, "we can always climb on the mountains which it cannot reach." But they were wrong. The water caught up with them, and they drowned, up to the last man. All animals also perished in the Great Flood which marked the end of the world.

Only one Indian was saved, Etsie, the grandfather, who had built the boat nevertheless, and had taken with him a couple of birds and animals of each kind. When they had travelled in Etsie's boat for a long, long time, food became scarce; they hated the sight of the water, and longed for the soil. But there was no trace of it. The flood would not disappear. All water-animals tried to reach the ground by diving, but they did not succeed. The eagle flew away to look for some firm soil, but he found nothing. The pigeon tried his luck and stayed away for two days, after which he returned, completely exhausted. But he carried a small piece of pine in his beak: he had seen some tree-tops emerging from the water. This encouraged all other animals, and they began to dive again in their search for the ground. The bisam rat almost drowned in his attempt. The otter stayed under water so long that he almost died. "Nothing!" he said before he fainted. Finally the little trumpet-duck tried his luck. When he emerged from the water, he had some soil between his toes. He tried again, and by some miracle he succeeded in lifting the earth. It is he who brought the earth back to all who live to-day. He is the smartest of all creatures.

But not only is the origin of all beings and all things—visible or invisible—explained in the stories of the aborigines; all important events in their lives become the core of their myths. The habits, shapes, and colours of animals are 'factually' explained. The opossum has a large mouth because he once laughed excessively at the deer whom he had fooled; the howling monkey never descends from the trees because he is afraid of the tapir whose precious flute he once stole; the animals live now in the bush and no longer in houses as before, because a son of men out-tricked them. Certain animals are recognized as masters of clever ruse; mostly small in stature, they outwit their larger brethren by their quick thinking. In our tales this rôle is played by the fox; in Africa and South America the clever one is often the turtle. Some

animals were formerly humans, yet deeds of greed or selfishness 'made their hands crooked'—but more often the animals are the ancestors of man.

Some animals are regarded as 'bad,' like the wolverine of the North, that 'Indian devil' who steals the bait from the traps and springs them, and who even eats the precious bundles of fur stored by the Indians in their caches. To the African Pangwe the ichneumon, which eats the chickens' eggs, is *nsöm*, a criminal.

In contrast to this, other animals are worshipped for the sake of their 'noble' qualities. The alligator-killing varan is holy in many parts of Africa; the Pangwe treat him as their equal, and use his likeness as their favourite ornament. In arctic regions especially the bear is looked upon as equal, if not superior, to man. A pipe of peace is stuck in his mouth by the hunter who was 'forced' to kill him, and the sight of his dead body is hidden from the eyes of women and children to spare his feelings. The Naskapi believe that all animals live in tribes, like people, but not so the bear, because each bear is 'a chieftain by himself.'

Many native stories end in a moral. Told for educational purposes, they warn one not to neglect the gods, not to touch one's neighbour's property, not to laugh at the aged, and so forth; or they ridicule those who desire what they are not fit to have, like the rabbit who tried to imitate his friend the beaver, and was almost drowned in his attempt to fish beaver-fashion in the icy water.

All the wit and gaiety of the primitives scintillate in their stories. Some are hilarious in their grotesque descriptions and analogies; some are saintly, others audacious. Some, unknowingly, preach deep philosophy. In Africa animal fables are told before the courts of justice to stress a legal point or to whitewash a defendant. Elsewhere roundabout suggestions are made to the gods in the form of solemnly told stories. All over the primitive world the entertainment and education provided by the ancient tales substitute effectively for Church and school, cinema and magazine. Whatever their contents, they are good stories and eagerly listened to. Songs and poetry occasionally interrupt the flow of the narrative; artistic pauses increase the element of suspense, and all the tricks of accomplished rhetoric are applied to enchant the minds of the listeners.

The right to tell the ancient stories is often owned by one group or individual alone, and the teller of tales is usually a revered old man; his title is 'master of the tale.'

The Dayak of Borneo distinguish between three different languages: those of men, of the souls, and of the gods. Indonesian

æsthetics distinguish between an ordinary and a high style of narrating a story. *Rentas* is the adjective bestowed upon a masterly Dayak story-teller 'whose words one hears with delight.' His job is to entertain the people at night when they are making braid in the community house. Among the favourite subjects of his tales are gods and ghosts, men, plants, and animals, the jewelled flowers of the 'Better World,' the vampires with their bones of knives, the deeds of Abir the hero, the ruses of the dwarf, and the well-known trial in which it was decided that the delicious smell of roasted fish must be paid for with the lovely sound of drums. A Dayak story apt to please must have three qualities—truth, beauty, and logical sequence—and the expert listeners are not easily fooled.

The African tellers of tales like to speak 'as though they talked to the fire.' The Eskimo and the old men in the tents of Labrador seem to translate the magic light of the aurora borealis into words when they relate with sparse gestures and in the tone of reverence the secrets of the wilderness. A bird is no longer a bird, but becomes the messenger of some mystical shaman; the night breathes with life—stars and moon, bear and beaver, sledge and ice, begin to speak with human voices; and the presence of the forces of the universe is felt in intimate tangibility by all who listen to his slow and stirring voice.

But better than any mere description are the tales themselves. A few follow. In accordance with the idea of this book, they have been chosen for the sake of one common characteristic: they all explain the origin of things.

THE ORIGIN OF THE SUN

*An Australian Myth*¹

In the olden times there was no sun; only the moon and the stars shone together in the skies. There were no people on earth, only birds and some animals much larger than we know them to-day.

One day Dinevan, the emu, and Bralgah, the crane, took a walk together. But they had a misunderstanding, and soon began to fight one another. Bralgah lost his temper, rushed to the nest of Dinevan, seized one of his eggs, and threw it with all his strength towards the sky, where it hit a pile of firewood and smashed to pieces. The yellow yolk ran all over the wood-pile and set it aflame, so that the whole world was suddenly lit up by the burning wood. Until then there had been only a very dim light over the earth, and now those beneath were blinded by the strong glow of the fire.

¹ Adapted from K. Langloh Parker.

The good spirit who lives in the skies liked the illumination, and thought how nice it would be to have a fire like this every day. So he established the custom. Every night his servant spirits collect the firewood, and when the pile is ready he sends the morning star out to announce that the fire will be lit up soon.

However, he noticed that the visible announcement by the morning star alone could not awake the sleepers on earth, and he looked for a sound effect to accompany the signal. Yet he could not find the right individual to make the right sound.

One evening he heard the laughter of *gurgurgaga*, the cock. "This is my man!" he said to himself, and engaged the bird to laugh every morning before the lighting of the pile would begin. If he should neglect his duty the pile would not be set on fire.

Gurgurgaga has since done his job so well that he never neglects to laugh every morning at the proper time. He ends his performance by calling his name three times: "*Gurgurgaga! Gurgurgaga! Gurgurgaga!*"

In the morning, when the spirits light the pile, there is not much heat at first. But towards noon, when the whole pile is aglow, it gets pretty hot on earth. After that, the warmth gradually decreases until in the evening there is just a faint red glow left, which quickly turns into grey ashes. Only a few burning logs are kept over night, carefully wrapped in clouds, so that the fire can be rekindled easily when the morning comes. If some one should ever ridicule *gurgurgaga*, who is very sensitive, he would stop laughing in the morning, and then the earth would be shrouded in darkness again.

THE ORIGIN OF THE MOON

*A Tale from New Guinea*¹

In our village of Votrejéng a brother and a sister were once alone at home. When they got hungry they looked for some sago to cook a meal. When they took the cover from the big earthenware pot where their mother kept the sago they found in it one big piece which was perfectly round and had such a beautiful brilliant shine that they forgot their hunger and began to play ball with it outside their hut.

The sun-god *Wunekau* who peeked down from the sky watched them play, and came down a little bit to have a better look at that shining piece of sago. Finally he covered his face with a huge leaf in order not to singe the children, and came down within talking distance. "Throw your ball a little higher," he said to the children, "so that I can have a look at it too." When they did so he caught the ball of sago and took it with him into the skies,

¹ Adapted from P. H. Meyer.

disregarding the crying children. After all, until then he had had a very hard life, being on duty day and night. He established the sago ball as Moon, the night watchman, and as soon as the moon begins his rounds the sun can rest and go to sleep.

THE ORIGIN OF THE MAN IN THE MOON

*As told by Tomo Kak'wa of the Montagnais-Naskapi Tribe*¹

In olden times there was no night. The sun and the moon shone side by side in the heavens, so that it was always day.



He looked at the moon, close at hand, and was no longer afraid of her. In fact, he liked her so much that he eagerly walked into her. Then he himself cut the snare. . . .

An Indian called Tsegabec longed for the darkness, and he resolved to create the night. He was a wonderful trapper, and could snare any animal he wanted to. His sister had once said to him :

“If you ever want to catch something unusual, ask me for some of my long hair and make a snare of it. With such a snare you will be able to catch things that the other Indians cannot trap.”

¹ Recorded by Julius E. Lips.

On that day Tsegabec went to his sister and asked her for one of her hairs.

"You must be up to something," said she.

"Oh, no," said he, and began to sing.

She gave him a hair, and he made a snare out of it. He carefully set the snare at the end of the path which the moon was accustomed to travel, and, believe it or not, he actually caught the moon in it.

Night fell, and for a long time darkness was on the earth. Tsegabec began to weep, and was afraid of what he had done.

At home in his tent he had a huge bag of animals which he had once caught in his snares: rats, moles, mice, and other little creatures.

When the moon had been caught he asked his sister to bring him the bag with the animals.

"What do you want it for?" she asked.

He answered: "Never mind! Just bring it to me!"

He let the animals out, and begged them to gnaw the moon out of the snare. They tried one after another, but to no avail. Finally the mouse succeeded in freeing the moon. The moon again jumped up to the heavens and ran after the sun, but she could not catch up with him. Since that time, the sun and the moon have been as we see them to-day, and thus day and night were created.

But Tsegabec could not forget his adventure with the moon. He could not resist the temptation to catch her once again.

One day he left his tent, prepared to go hunting.

"Where are you going?" asked his sister.

"Oh, I am just going out to trap rabbits," answered Tsegabec. But secretly he went to the edge of the world where the moon rises, and again set his snare to catch her.

When the moon rose she again caught herself in the snare. Seeing this, Tsegabec rejoiced. He looked at the moon, close at hand, and was no longer afraid of her. In fact, he liked her so much that he eagerly walked into her. Then he himself cut the snare, and rose up to the heavens in the moon.

From there he still looks down upon the earth every night when it is dark. We call him the Man in the Moon.

The Haida, another North American Indian tribe, believe that Roong, the moon, once saw on earth a man whom he liked. Sending down his rays, he pulled the man up to him to have company. The kidnapped Indian tried to hold on to his water-bucket because he wanted to stay on earth with his family, but to no avail. Since then, he is up there in the moon. Whenever he turns over the pail which he still holds in his hand it rains on earth.

In Micronesia, as P. Hambruch and A. Brandeis tell us, the 'human figure' in the moon is not a man at all but a pretty girl from Nauru Island, who once lived with her grandmother under a

very tall tree. Ejiwanoko—that was the girl's name—was so beautiful that her grandmother thought her too good to marry a mortal man and looked for a son-in-law among the gods. One day she advised the girl to adorn herself with flowers and sweet-smelling oils, and gave her some magic medicine, after which she told the girl to climb upwards in the tree, higher and higher, until she reached the sky. Nobody had ever been able to accomplish this before.

Ejiwanoko did what she was told. When she arrived among the clouds she found there a blind old woman who, with hot stones, cooked palm wine to molasses in thirty coconut calabashes. Overwhelmed by thirst, the girl drank from some of the vessels. The woman, though blind, noticed this, and threatened to have her killed by her two sons when they got home in the evening. The girl tried in vain to obtain her forgiveness, and finally in her anxiety offered to cure the old woman's eyes. To her own amazement, she succeeded. She touched the blind eyes, and immediately some lizards, bugs, and other nasty creatures sprang out of the old woman's eyes, and she could see again.

Happily, the old woman embraced her, and hid her under a huge *Tridacna* shell, because her returning sons would kill any stranger. But when the first son, Iguan, came home he noticed that his mother shut her eyes at his approach. He was the sun, and no seeing person could look at him without being blinded. While he asked her who restored her sight the second son came home. He was Merriman, the moon. When their mother told them what had happened, each of them wanted to see the girl. She came out from under the *Tridacna* shell, and was so beautiful that both wanted to marry her. They left it to her to choose between them, and promised that they would not be jealous. The old woman asked her which of the two should be her husband. Ejiwanoko said :

“ I cannot marry Iguan. He is too hot ; I cannot look at him. But Merriman looks so quiet and gentle. I will go with him.”

Upon these words, Merriman took her in his arms and sailed with her up into the skies, where we can see them travel together when the night is clear.

THE ORIGIN OF DAY AND NIGHT

*As told by the Creek Indians*¹

The animals held a meeting, and Nokosi, the Bear, presided. The question was, how to divide day and night.

Some desired the day to last all the time ; others wished to have

¹ After John R. Swanton.

all night. After much talk Chew-thlock-chew, the ground squirrel, said :

“ I see that Wotko, the Coon, has rings on his tail divided equally—first a dark colour, then a light colour. I think day and night ought to be divided equally, like the rings on Wotko’s tail.

The animals were surprised at the wisdom of Chew-thlock-chew. They adopted his plan, and divided day and night like the rings on Wotko’s tail, succeeding each other in regular order.

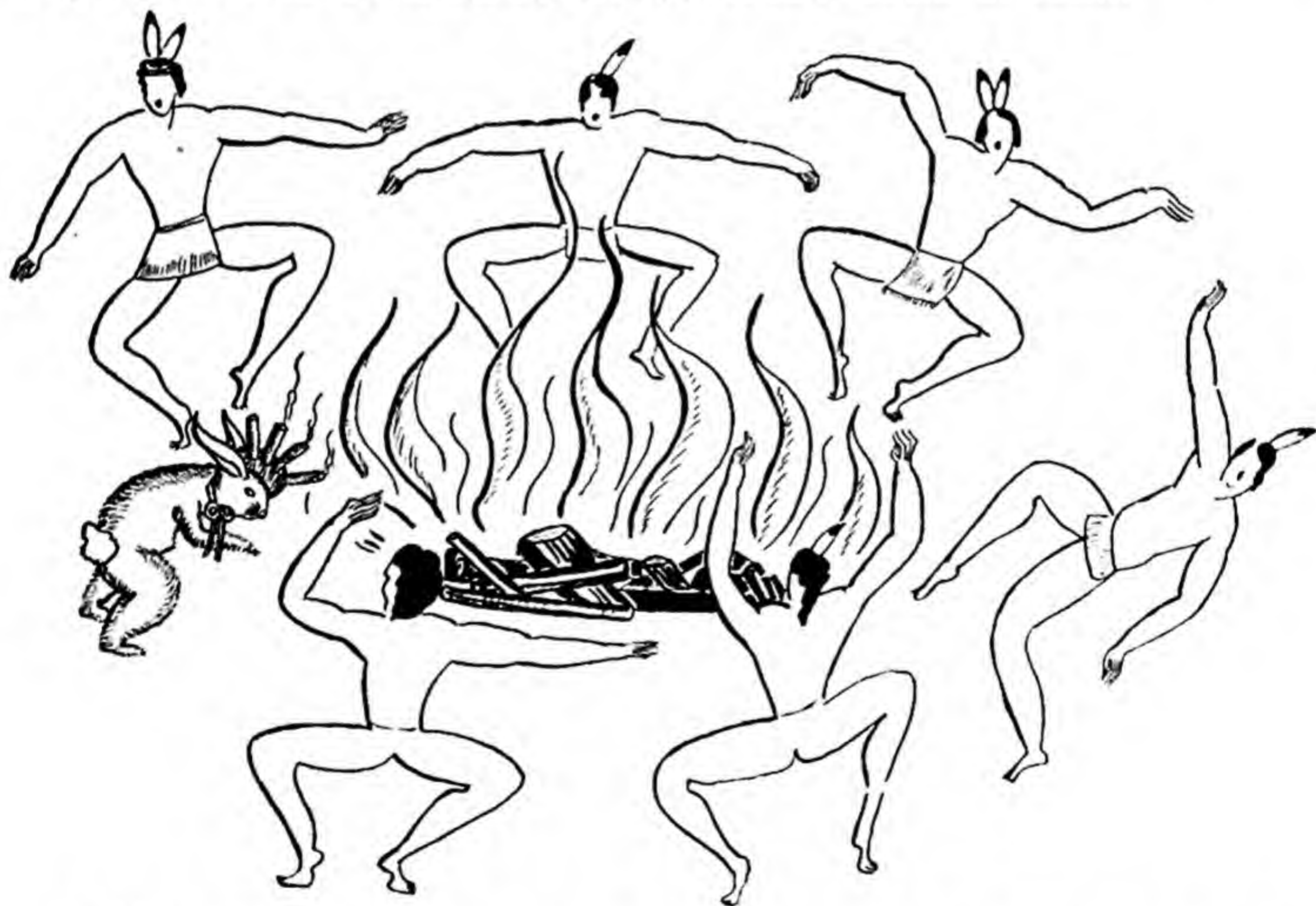
Nokosi, the Bear, in envy scratched the back of Chew-thlock-chew, and thus caused the stripes on the back of his descendants, the ground squirrels.

THE ORIGIN OF THE FIRE

How the Creek Indians got It¹

All the people came together, and said : “ How shall we obtain fire ? ”

It was agreed that the Rabbit should try to obtain fire for the people. He went across the great water to the East. He was received gladly, and a great dance was arranged. The Rabbit entered the dancing circle, gaily dressed, and wearing a peculiar cap on his head in which he had stuck four sticks of rosin.



Rabbit also bowed to the fire, lower and lower. Suddenly, as he bowed very low, the sticks of rosin on his cap caught fire, and his head was a blaze of flame.

¹ After John R. Swanton.

As the people danced they approached nearer and nearer to the sacred fire in the centre of the circle. The Rabbit also danced nearer to the fire. The dancers began to bow to the sacred fire, lower and lower. Rabbit also bowed to the fire, lower and lower. Suddenly, as he bowed very low, the sticks of rosin on his cap caught fire, and his head was a blaze of flame.

The people were amazed at the impious stranger who had dared to touch the sacred fire. They ran at him in anger, and away ran Rabbit, the people pursuing him. He ran to the great water and plunged in, while the people stopped on the shore.

Rabbit swam across the great water, with the flames blazing from his cap. He returned to his people, who thus obtained fire from the East.

THE ORIGIN OF DEATH

*As explained by the Kamba, a Bantu Tribe of British East Africa*¹

The great old man in Heaven said: "Well, I have created men. They die. But I don't want them to be dead altogether. They should rise again."

He created the people and set them loose in a distant region. As to himself, he stayed at home.

For three days he was visited by the Chameleon and the Weaver-bird, and he noticed that the Weaver-bird is very talkative and that his words are composed of truths and lies. But he uses more lie-words than truth-words. On the other hand, the great old man realized that the Chameleon was a wise creature whose words were truthful. So he turned to the Chameleon and said:

"Go to the place where the people dwell whom I have created. Tell them: when they die, and even if they are very, very dead, they shall nevertheless rise again. Every man shall be able to rise after death."

The Weaver-bird remained with the great old man. In the meantime the Chameleon had arrived at the humans' place, and began: "I have been told . . . I have been told . . ." Well, he had forgotten the message!

The Weaver-bird said to the great old man: "Let me fly a bit at the Chameleon's side," and he was told: "Go!" He just arrived when the Chameleon turned helplessly to the humans to stammer again: "I have been told . . ."

Immediately the Weaver-bird fell in and said: "We have been told that when humans die they have to perish like the roots of the aloe." But the Chameleon who now remembered said:

"No! We have been told to say: 'When people die, they shall rise again!'"

Since each of the two insisted that his message was the right one,

¹ Adapted from Brutzer.

and since they could come to no agreement, they called upon the magpie to be their arbitrator.

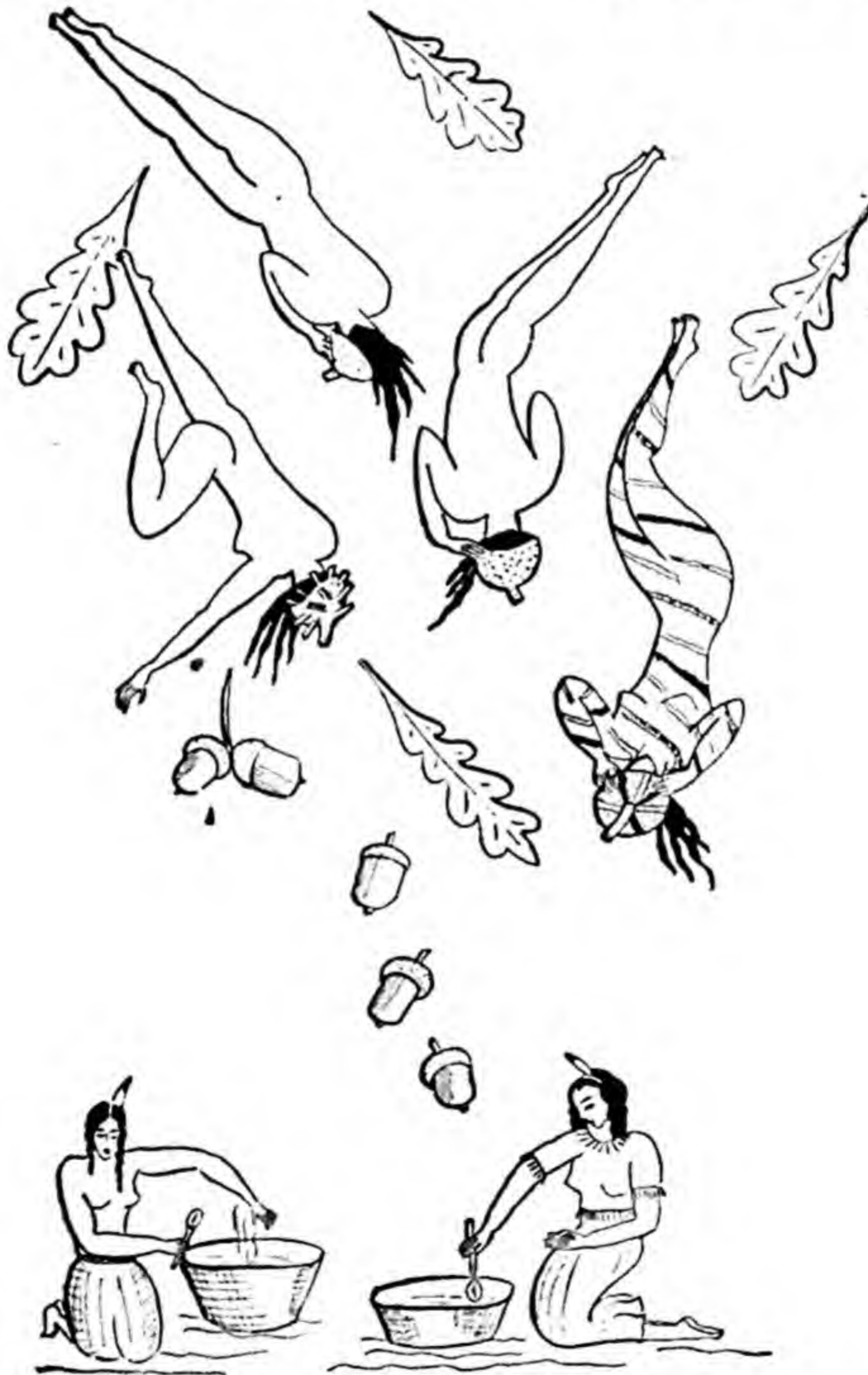
"The Weaver-bird is right, the Chameleon is wrong!" was the decision of the magpie.

Since that time men have to die, and cannot rise again.

THE ORIGIN OF THE ACORNS

*A Karuk Indian Myth*¹

Acorns were formerly members of the Iksareyav tribe, the Indians who were here before we came and who turned into the animals, rocks, things, and ceremonies which the Karuk hold dear.



In falling, they became giddy, and shut their eyes and turned their faces into their hats. . . .

¹ Adapted from John P. Harrington.

Three acorn girls, Black Oak Acorn, Tan Oak Acorn, and Post Oak Acorn, decided that they should have nice-looking hats, and they started weaving them, each one for herself. At that time the Iksareyavs still lived in Heaven. While they were weaving the girls felt that something unusual was going on, and they said to each other: "We'd better go! Human is being raised."

Black Oak Acorn did not finish her hat. Tan Oak Acorn did not have the time to clean off the projecting straws from the inside of her hat, so she just turned it wrong side out and wore it that way. Only Post Oak Acorn had finished and cleaned her hat. When they got ready they were joined by Maul Oak Acorn, who wore a nice hat.

Suddenly, they fell from the Heavens into Human's place. Anticipating their future destinies, they said: "Human will spoon us up." In falling, they became giddy, and shut their eyes and turned their faces into their hats.

When they arrived on earth they grew jealous of one another. Tan Oak Acorn wished bad luck toward Post Oak Acorn and Maul Oak Acorn, only because they had nicer hats. They, in turn, wished her to be black. The bad wishes came true, and so it happens that to-day nobody likes to eat Post Oak Acorn and that Maul Oak Acorn does not taste good either, because she is hard to pound. The soup they make is black; it is not good soup.

Before they spilled down they had just painted themselves. Black Oak Acorn was striped; she is still striped when we pick her up from the ground to-day. But Tan Oak Acorn did not paint herself much; she didn't think it worth while because her hat was not finished.

Because they turned their faces into their hats when they fell they still have their faces in their hats nowadays.

THE ORIGIN OF THE SHELL MONEY

*As told on the Gazelle Peninsula, Melanesia*¹

We had shell money in the olden times, and we had to travel only four days to the place where it abounded. But now it takes us six months to find it. Why? Just listen.

One day the men boarded their boats to make the short trip to the money land, and the whole village was at the beach to see them off. An old man warned: "Be polite toward every one you meet," and they left.

After a short while they met the hermit-crab, who courteously wished them a good morning. The men in the boat laughed at

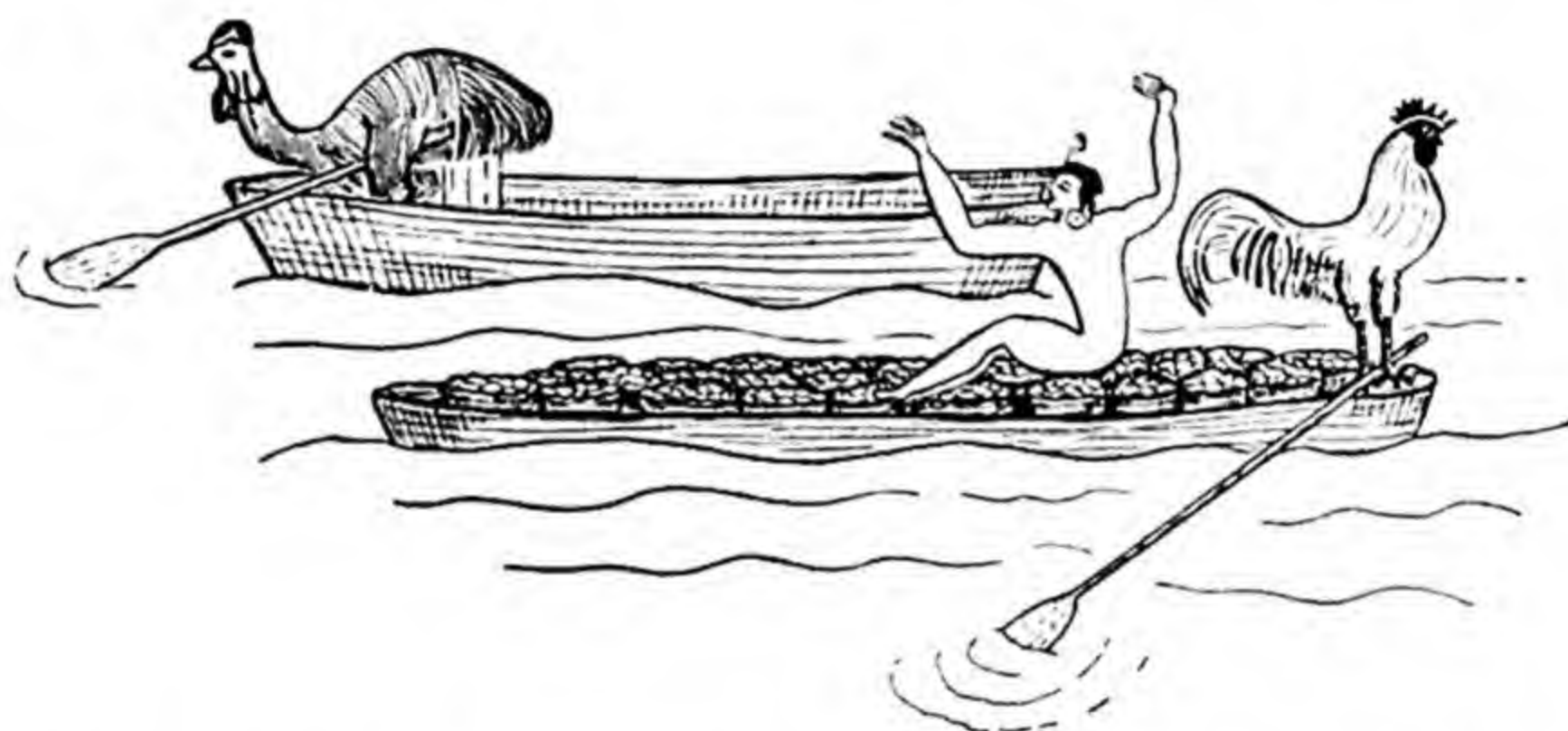
¹ Adapted from P. J. Meier.

him and said: "Look at the ugly face of that fellow! Isn't he disgusting?" And they did not greet him.

The hermit-crab said to them: "Just go ahead! You will not find any more shell money! The shells will move far away to a distant place. Men like you are not worthy of them!"

And really, the men could not find a single shell. Sadly and empty-handed, they returned. And there was no more money to be had.

One day a little boy who was hungry asked his parents for food, but they would not give him any. They scolded him and said: "Why don't you eat the dirt or the dirt of children who are your playmates?" Sadly he went to the beach, where he met an old tree lying in the water.



On their way they met another dug-out in which a cassowary sat and paddled. After an exchange of polite greetings, they passed each other.

"What is the matter with you?" asked the trunk. "Why are you so sad?"

"My father and mother have scolded me," said the boy, "I don't know what to do."

"Jump in," said the tree which the boy now recognized as a dug-out, and they swam out into the sea. There were coconuts in the canoe, and the boy could drink and eat. With great speed they moved on and on until they finally landed at Nakanai, the place where the shell money is found to-day. The dug-out now advised the boy to weave baskets, two and eight and ten—until he had thirty of them—and to line them up along the surf.

"Step back," said the dug-out, and suddenly a gigantic wave came, all filled with shells. It reached over the thirty baskets, and filled them all before it withdrew.

They were now no longer alone at the beach, because another dug-out had landed, steered by a rooster who was quite friendly and offered to take the boy back to his home in his canoe. He carried the thirty baskets full of shell money all in the rooster's canoe, and off

they went in the direction of the boy's village. On their way they met another dug-out in which a cassowary sat and paddled. After an exchange of polite greetings they passed each other.

Finally they reached the boy's home village, and while he went to his parents' house the rooster stayed in the canoe to guard the money baskets. When the boy reached the hut the boy saw that a funeral scaffold had been erected, that mourners had been invited, and that everything was ready for a funeral.

"All this has been prepared for you," said the boy's father and mother. "We thought you were dead, and we spent our last money on these preparations."

The boy took a large package of food, and asked his parents to follow him to the beach. There he thanked the rooster, gave him the food, and unloaded the thirty money baskets. The rooster jumped in again, and swam and swam until he was back at Nakanai.

"What shall we do with these shells?" asked the parents, because their former money had been of another shape.

"Drill holes into them and thread them on strings." So they did. The boy tied them to a large hoop, and gave it to his parents.

"Take this as a compensation for the expenses I have caused you," he said, and his parents returned happily to their home. The boy, however, took the rest of the money—and it was very much—built his own hut, and was now the wealthiest person in the whole village.

From time to time, under his guidance, the men of the village made an expedition to the island of Nakanai, whose overlords are the rooster and the cassowary, but they never find as many shells as the boy owns, and although they carefully pay their homage to the two masters of the island, the trip takes them six months, and they remain dependent upon the good will of the shells, the canoes, the cock, and the cassowary.

THE ORIGIN OF POTTERY

*A Tale of East African Ukamba*¹

Those earliest people of long ago who came up out of a termitary were given all sorts of food, but they had to eat it raw; it was not cooked.

One day a woman set out from the village and went to the river. She went to fetch water from the river in some rolled-up leaves. At the shore she found a peculiar-looking piece of rock, hollow in the middle. She filled it with water, and carried it home, where she put it on her hearth. When she prepared the food for her family in the evening she put some of the maize and bean mush into the hollow stone and boiled it and, lo and behold, it tasted wonderful and much better than raw food.

¹ Adapted from Gerhard Lindblom.

Next morning a neighbour dropped in, saw the hollow stone, admired it, and asked whether the woman had another one like it to give to her.

"No," said the first woman, "I found it near the river, and there was just one."

"Let us go there and look for another one!"

So the two women started off and looked around. There was no other stone like it, but there was fat and slippery clay, and they took some of it, mixed it with water, and tried to imitate the shape of the hollow stone. For five days they tried, and finally they made little things which they called clay vessels. They burned them in a fire, and they became hard and firm as stone.

At home they put them on the fireplace and invited all the rest of the women:

"Come and see! We have prepared this earth, and we are able to boil water in it which does not come out on the fireplace." And they also cooked mush in the vessels, and it tasted wonderful! The other women tried to imitate their handicraft, but they did not succeed, and whoever wanted a *nyun'gu* or clay pot had to order it from the two women, who were paid for it in beautiful blue beads.

And they called all the men, and there was a big celebration to commemorate the invention of the clay vessels. The women's husbands especially invited the holy old men who spit in the women's hands to bless them.

"*Pt, pt, pt,*" made the old men, and they said: "You have become very clever. You made the clay vessels!"

And they advised the women never to allow a man to watch them while making clay vessels, otherwise they would lose their skill. They abided by this faithfully.

That is how mankind learnt to make clay vessels, and our people have been blessed with them ever since.

THE ORIGIN OF THE SNOW-SHOES

*A Myth of the Carrier Indians of British Columbia*¹

The Grouse and a Carrier Indian sat down beside each other, and the Grouse, in a generous mood, showed the man how to make snow-shoes, which the animals used since the earliest times to walk over the deep snow. Grouse told him every detail, and the man learnt from him how to make the frame. When the first frame was ready the Indian's wife was called in, and Grouse showed her how to lace them with leather strings. So the woman laced the first pair. They thanked Grouse, and he left them to go back home.

¹ Adapted from Diamond Jenness.

He had gone only a little way when he fell dead, for he had talked too much.

That is how the Carrier Indians learnt to make snow-shoes.

Even if we have the best intentions, we should not talk too much.

THE ORIGIN OF THE KILLER WHALE

*A Tale of the Tlingit Indians*¹

A man of the Seal People Band who was a very skilled wood-carver thought that the Indians would be happier if there were killer whales, and he set out to make one.

He first tried to carve it out of red cedar, then of hemlock, then of all other kinds of wood in succession. He took each set of figures to the beach and tried to make them swim out, but instead they floated only on the surface. Last of all he tried yellow cedar, and this time he was successful.

He made different kinds of whales. On one he marked white lines with Indian chalk from the corners of its mouth back to its head. He said :

"This is going to be the white-mouthed killer whale." When he first put them into the water he headed them up the inlet, telling them that whenever they went up to the heads of the bays they were to hunt for seal, halibut, and all other things under the sea ; but he told them not to hurt a human being. He told them :

"When you are going up the bay people will say to you : 'Give us something to eat.'"

The whales followed his instructions, and since that time they drive the water creatures towards the shore so that the Indians can catch them.

Before this, people did not know what a killer whale was.

THE ORIGIN OF THE BEAVER

*As the Carrier Indians tell It*²

A newly married couple left Fraser Lake to hunt in the mountains to the southward, where they camped alone near a small stream. The woman grew lonely when her husband was absent from morning until evening, and to pass the time made a small dam across the stream ; but her husband, finding that it made the water too deep for him to wade across, broke it down with his foot.

She burst into tears, and said : "Why did you break it ? I was lonely while you were away, and built it to pass the time."

The next day she made another dam, and he broke that also. This

¹ Adapted from John R. Swanton. ² Adapted from Diamond Jenness.

happened again and again until she became very angry. One evening when her husband returned from his hunting he found a very large dam spanning the stream and a beaver-house in the middle of the water. His wife was kneeling on the edge of the pond with her breech-cloth in her hand. She tucked it between her legs as soon as she saw her husband coming, leaped into the water, and entered the beaver-house. The man broke down the dam and let out all the water, but he could not find her. Then he broke down the beaver-house. Still he could not find her. So that night he slept alone.



I changed into a beaver. Now go back home, for I cannot live with you any more.

He went hunting again the next morning, and when he returned his wife had repaired the dam and was working on the lodge. Already she was changing into a beaver. She eluded all his attempts to capture her.

He became afraid that her people would blame him for killing her if she would not show up again, so he went and returned with her whole family, and they all assembled at the shore.

They saw a large beaver leaping out of the water and sitting on the top of her house. It was the woman, whose trailing breech-cloth had become a large flat tail. She called to her people :

“My husband did not kill me, but I changed into a beaver. Now go back home, for I cannot live with you any more.”

That is why the beaver's belly and intestines resemble those of a human being and why there are now beavers in this world.

THE ORIGIN OF THE CAT

*A Tale of the Cochiti Indians of New Mexico*¹

At Painted Cave there was a village, and out of this village came the Deer, the Bear, the Lion, the Lynx, and the Wild Cat. They said :

“ Now we will go East and find our living the best we can.” But before they went they said :

“ There is one thing we have not got, and that is the cat. But how can we get the cat ? ”

The Lion stood in the middle of the circle, and all the oldest animals were smoking round him. He said :

“ Well, I am ready.”

He sneezed, and out came a female cat from his right nostril. He sneezed again, and out of the left nostril came a male cat.

From these two come all the little cats, and they came down to Cochiti. The Lion said to the cats :

“ Now you are the offspring of the Lion and have my face. When you have little kittens the humans will want them, because with these cats they won't have mice any more. They will be the watchmen of the houses. The rest of the animals shall live in the mountains, but you two cats shall live in Cochiti.” So it happened, and that is why we have cats to-day.

THE ORIGIN OF THE BLACK PEOPLE

*As told by the Fjort of the French Congo*²

In the first days of Creation four men wandered through an immense forest severed from the world beyond two rivers, one of which had clear water, but the other one was dark and muddy. At that time all people were white, and there were no black men in the world.

The dark river lay in front of the four men's path, but the clear stream was more pleasant to wade through. After deliberating, the men decided to go through the dark water, and two of the four did so at once. The other two hesitated, and ran away. The two men in the dark stream called to them and urged them to follow, but in vain. Their comrades ran to the clear river, and waded through it. When they climbed out they saw to their horror that they had become black, and only those parts of their bodies with which they had touched the dark river remained clean—their mouths, the soles of their feet, and the palms of their hands.

When the four comrades met again they decided to part company. When they reached their journey's end the black men found only

¹ Adapted from Ruth Benedict.

² After R. E. Dennett.

huts and married the black women they found in them. The white men who had climbed out of the dark river found enormous houses with white women in them, and married them.

That is why some people are white and some black.

THE ORIGIN OF THE SONG DAUSI

*A Myth of the West African Mandingo.*¹

Once there lived a great hero, and his name was Gassire. He pounced upon his enemies and looted their homes, and he thought that the glory of his deeds would never be forgotten.

One day when he returned home from a fierce battle he saw in the grass a partridge who sat there and sang. And this was the partridge's song:

"No sword is so powerful that the man who carried it would not be forgotten. Perishable are your warlike deeds, O Gassire, because they originate in brute force. I, too, who sing this song, will be forgotten—but not my song! Thanks to the gods who allowed me to sing the song called Dausi! Heroes and cities and countries will be forgotten some day—but never Dausi, the song that will live on for ever!"

When Gassire, the hero, heard this song of the partridge he became very thoughtful, and he began to ponder. He went to a wise old man to ask his advice. The wise old man said:

"The partridge is right! Perishable are the deeds of the sword! Heroes and cities and countries will be forgotten—but never Dausi, the song that will live on for ever!"

Upon this, Gassire, the hero, went to a blacksmith. All good things in Africa are made by the smiths. Gassire said:

"Build me a lute, so that I may play on it Dausi, the song that will always live."

The blacksmith said:

"I will make you one. But the lute will not be able to sing."

Gassire said: "Smith, do your job. The rest is up to me."

The smith built the lute and brought it to Gassire. Gassire touched it, and tried to play it. But the lute did not sing. Gassire said to the smith:

"What is this? Why doesn't the lute sing?"

The smith said: "I told you so in advance."

Gassire said: "Make the lute sing!"

But the smith answered: "I did my job. The rest is up to you."

Gassire asked: "What shall I do?"

The smith answered: "The lute is a piece of wood. It cannot sing because it has no heart. It is up to you to provide it with a heart. The wood must go to battle on your back. It must absorb the tears from your eyes and the breath from your breath. Your sorrows must become its sorrows; your glory must become its glory."

¹ Adapted from Leo Frobenius.

The wood must cease to be part of the tree from which it was shaped. It must become a part of your destiny."

Upon this, Gassire called his eight sons and said to them :

"To-day we all go to battle. But the deeds of our swords shall not be forgotten. The sound of our weapons shall live on through the times. I and you, my eight sons, shall live on in the song whose name is Dausi."

So they went to battle, and they fought like heroes. Gassire carried the lute on his back. The beating of his brave heart echoed in its wood, and the sweat of his exhaustion moistened the lute when he went home victoriously.

For eight days he went to battle with his eight sons, and always he carried the lute on his back. And every day one of his eight sons was killed. Gassire carried their corpses back on his shoulders, and their blood dripped on the lute. When he had no son left he wept for the first time in his life, and his tears fell upon the lute.

Night fell, and all people went to sleep, but not Gassire, who sat by the fire alone. He thought of his glorious deeds and thought them all in vain, and again he wept in his deep loneliness.

Suddenly he heard a voice next to him. It sounded as though it came out of his own inner self. Gassire listened. He began to tremble. He heard the lute sing. The lute sang Dausi, the song that never dies. Not his deeds but his tears had given a heart to the lute. That was why it could sing.

It is many centuries since Gassire lived. The sound of his sword is forgotten. But we to-day still sing the song of his heart—Dausi, the song that will always live. And those who will be born long after us will go on singing it.

CHAPTER FIFTEEN

Journey's End

OVER ALL THE things we do and own, over our happiness and our grief, stands, as an ever-present *mene tekel*, the knowledge that "this, too, shall pass." The Bible promises us a span of life of "threescore years and ten" and perhaps, "by reason of strength . . . fourscore years," after which we have to "fly away." Modern statistics show that most of us are not given that long. Even the latest wonder drug of science, which is supposed to extend human life expectancy to a century and a half, cannot nullify the inevitability of death.

The manner in which we resign ourselves to the knowledge that some day our hearts will stop beating depends on our individual philosophy of life, on the depth of the sources that reconcile us with death. "All men are condemned to death—only the date of the execution is uncertain" is the consolation with which Victor Hugo's condemned criminal is comforted in the guillotine's shadow. This forethought of the inevitability of death stands in sharp contrast to the conceptions of primitive man. Though surrounded by the ever-present evidences of death that are even more obvious in the wilderness than in civilization, and dependent upon the necessity to kill living creatures, it does not occur to primitive man as a logical necessity that, in the course of nature, he himself must die. He does not realize the certainty of death.

To most primitives the state of death is a mishap caused by supernatural forces, most of all by witchcraft. A lethal illness is the evidence of evil influences, and even accidents are caused by a conspiracy of hostile spirits. In Australia, in South and North America, in Melanesia, Africa, Madagascar, and elsewhere, the origin of death lies in 'unnatural' occurrences which man accepts only with repugnance and fear. Even errors on the part of the supernaturals may cause it, as some of the ancient myths explain. Many tribes also believe that sexual intercourse and death are inter-related and that the 'invention' of the first led to the introduction of the second.

Primitive people are not given to any speculating whatsoever on their own future death, which may or may not come. It may be that shrewdness, carefulness, and worship of the proper spirits can make an eternal existence on earth a reality—who knows? The

African Kpelle, for instance, worship their old men and women because they have been smart enough to avoid for many years the attacks of wizards, demons, and jealous ancestors.

Whatever the explanations, so much is sure : all peoples on earth have very definite ideas on what happens to a man or woman who is dead. Most believe in a clearly described place where the departed continue their existence under circumstances similar to those on earth, and that all people bury their dead in a manner conforming to these conceptions.

As to the ways in which the survivors take care of the bodies of the departed, even the most primitive cultures use such a multitude of methods that it is hopeless to speculate on which is the oldest form of burial. In Tasmania and Australia people were cremated on pyres or buried in graves. Many northern and western Australian tribes bury their dead in trees or on scaffolds high up in the air, or lay their bodies to rest in caves, as in Victoria. The dead may be dried in the sun or over the fire and then deposited in a tree, or they may be hidden in a hollow trunk. On San Cristobal twenty-one different types of funerals are known, from burial in the earth, in the sea, in rocks, on trees or scaffolds, and in large bags, to cremation and mummification.

All these methods and the great care applied in disposing of the body are not exclusively inspired by concern for the welfare of the departed, but are the result of the fear that the person excluded from community life by the 'accident' of death may find means of returning from his state of alleged immobility to frighten or harm those who survive him. This idea of the revengeful jealousy of the dead goes, like a red thread, through the burial customs of all mankind since prehistoric times, up to our own civilization. The stones that weigh down the soil over the Tasmanian grave, the fettered mummies of Egypt, the nailed coffins of our days, all originate in this atavistic fear.

Manifold are the means used to keep the body in its grave. The Tasmanians tied the bodies to prevent them from moving. In Australia the hollow tree which serves as a coffin may be pierced with a spear to nail the neck of the departed to his prison, or the whole tree may be set on fire after the burial. The nailing of the dead to wooden boards in their grave developed into a regular funeral rite in prehistoric Spain. Whole cemeteries have been found where the skeletons showed all the evidences of a 'second killing' by the piercing of their skulls with huge nails. This custom was practised all through the ages, and later on was obviously limited only to restricted groups of the population. It lives on in

a curse of present-day Aragona : " May you be nailed like a Jew " (*clavado to veas, como judio*).

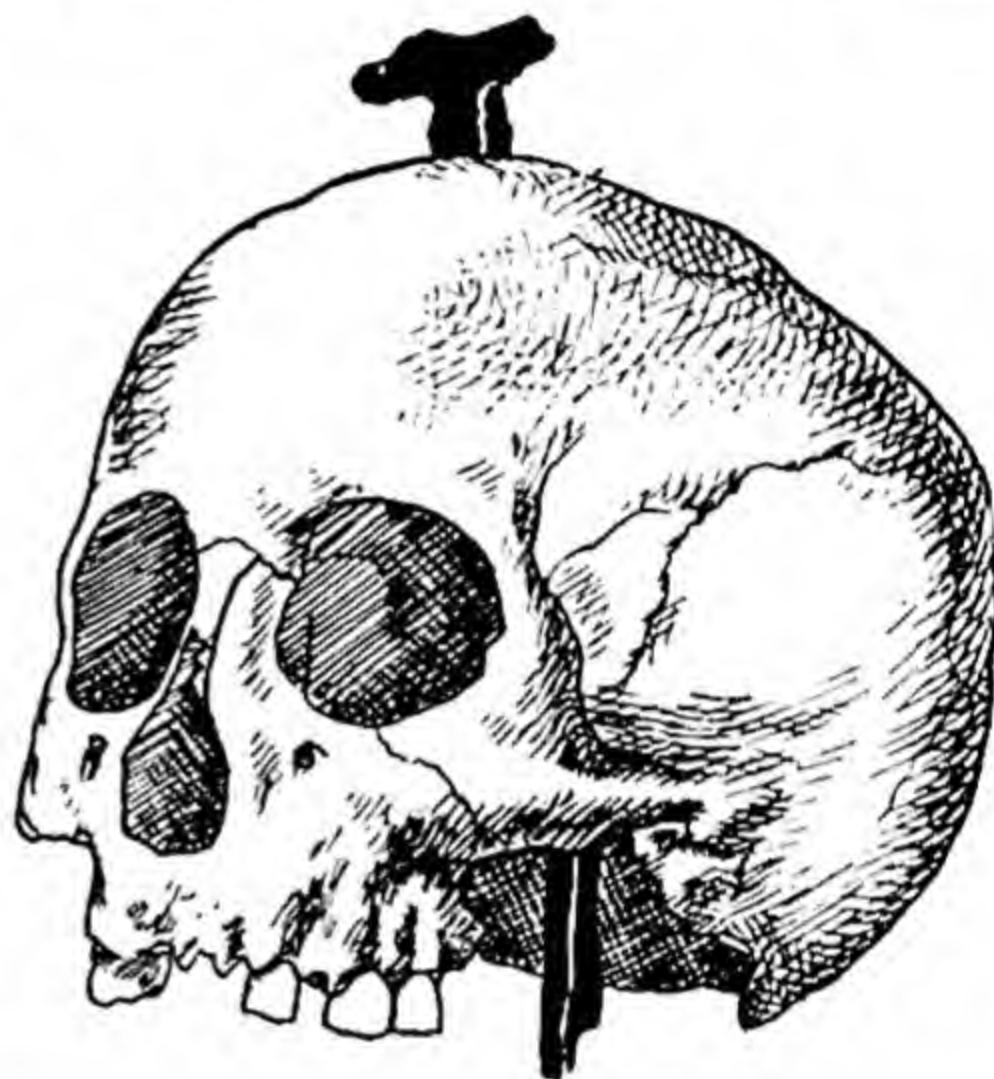
All over the earth primitive tribes thus take precautions that the silent prisoner may find it impossible to leave his grave to direct his powers against the community. The many shapes the dead are able to assume make their reappearance doubly hazardous. In south-eastern Australia the dead stand as stars on the sky ; they have secret intercourse with the wizards of the tribes, and even ordinary men and women occasionally hear their voices and in the morning see the tracks of their feet. The corpse itself may live on, though slightly changed in appearance. The first white men appearing in some regions in Australia and Africa were taken for the spirits of the tribal dead.

To persuade the deceased to stay in his burial place, his friends and relatives try to make his new home as comfortable as possible. The face and body are protected from immediate contact with the soil ; the departed may be bedded in a niche in the rocks to shelter him from the elements. A handsome

young man of the Australian Wimmera tribe who had been buried in the ground was, as his tribesmen decided, " too uncomfortable " in his grave when the chilly November rains set in. His friends exhumed him and gave him a better burial place in a hollow tree which they firmly sealed for his comfort.

In addition, the dead may be honoured with speeches and promises, but after these gestures of consideration the living leave the place of death as quickly as possible to avoid giving their former comrade any opportunity to haunt them. Even in the oldest cultures, however, we find the custom of simply exposing the dead and leaving them to the mercy of the animals, a method which, for other reasons, is especially typical of the arctic cultures and of the herdsmen societies. Sometimes the actual moment of death is not even waited for, and the tribesmen hurry away to escape the spirit of the abandoned before he has breathed for the last time.

When a tribesman was accidentally drowned the Mojos Indians of eastern Bolivia ran immediately into the woods for fear that the



NAILED SKULL

Puig Castellar (Spain)

After H. Obermaier

departed might snatch one of them for company. The Neoze of the same region wrap their dead in mats and build a small hut of *mocatu* leaves over the body, but then they hurry away. Where the dead are buried on a scaffold or in trees, the bones may later be collected and buried in the ground, and some parts of the skeleton may be carried around reverently to assure the dead of continued remembrance and at the same time to utilize the magic powers inherent in the relics.



SKULL, PAINTED IN RED,
WHITE, AND YELLOW

Kopapinga Tribe,
Arnhemland, Australia

After F. D. McCarthy

The Australians paint such bones or skulls with red or yellow ochre to preserve them as tokens of reverence. The Andamanese, who bury their dead crouching in the soil or lying on platforms in the trees, later collect the bones and fashion them into ornaments which friends and relatives of the departed wear. The bones left on the smouldering funeral pyre were carefully collected by the western Tasmanians. Tied in animal skins, they were carried about by the relatives as amulets against sickness and bad luck. This custom lives on in the habit of modern Japanese who pick the remaining bones from the place of cremation. Grieving fathers, for

instance, thus collect the bones of their departed children and keep them at a place of reverence.

Another morbid relic of the dead is the liquid that drips from the corpses laid to rest on lofty wooden structures. It is supposed to have magic qualities which the living utilize for themselves. The young men of certain tribes of eastern Queensland, like the Kuinmurburra, who deposit the bodies of their great warriors on wooden scaffolds, let this liquid run over their bodies to absorb the heroic qualities of the deceased. The natives of the Belendenker region rub their bodies with this essence to become strong; the Narrinyeri collect it in containers and use it in their magic ceremonies.

This effort to utilize the magic powers of the ancestors for the benefit of the living finds even stronger expression in the cultures of the agriculturists. Being settled and unable to leave the place of death, they had to find means to be on permanently good terms

with the departed. Their entire approach towards the phenomena of life and death is determined and dominated by their close relationship to the dead ancestors whose souls live with and among them in continuous relationship. Although the soul may not be immortal in our sense, it lives on in parts of the body or in other forms of rebirth. It may, however, 'age' and fade away after a certain period has elapsed.

In many places, for instance on the New Hebrides, it is assumed that the soul may die two or three additional deaths until it disappears altogether. It often seems as though the spirits of the ancestors can only remain 'alive' if continued remembrance and sacrifice tie them to the living. Many agricultural peoples know a regular system of a series of reincarnations, although without the ethical conceptions which influence the idea of rebirth in higher cultures. The Dayak of Borneo, for instance, believe that a soul can dwell seven times as long in the land of the Great Beyond as on earth and that it finally returns once more to earth to be reborn in a mushroom, a fruit, a leaf, a blade of grass, or a flower. If a human being eats such a plant or part of a plant a child will be born to him in whom the soul of the grass or plant lives on.

In times of stress and need the living appeal to the dead for help and assistance. These appeals are often in the form of regular formulæ or prayers to the spirits of the dead; they are supported by gifts. This continued care is in strict contrast to the attitude of the food gatherers and hunters, who do not know the sacrifice offered to the manes.

The spirit that enlivens a man is believed to be located in parts of his body—be it in the heart, brains, blood, liver, kidney, the breath, or the shadow. However, most often the principal seat of the spirit of the dead is the head, which gains an overwhelming significance as the centre of mystical powers in these cultures. Skulls are the objects of intensive worship. In the younger complexes of the agriculturist cultures, particularly, this worship leads to a post-lethal exhumation of the skull because it is believed to be the precious seat of spiritual powers. Often these skulls are not only painted and decorated, but also modelled with clay into lifelike images with eyes of shells or stones, and are preserved in homes, in community houses, or in special containers, as objects of religious awe. Palavers and sessions of the native courts are held in their revered presence; vital decisions are made with their support.

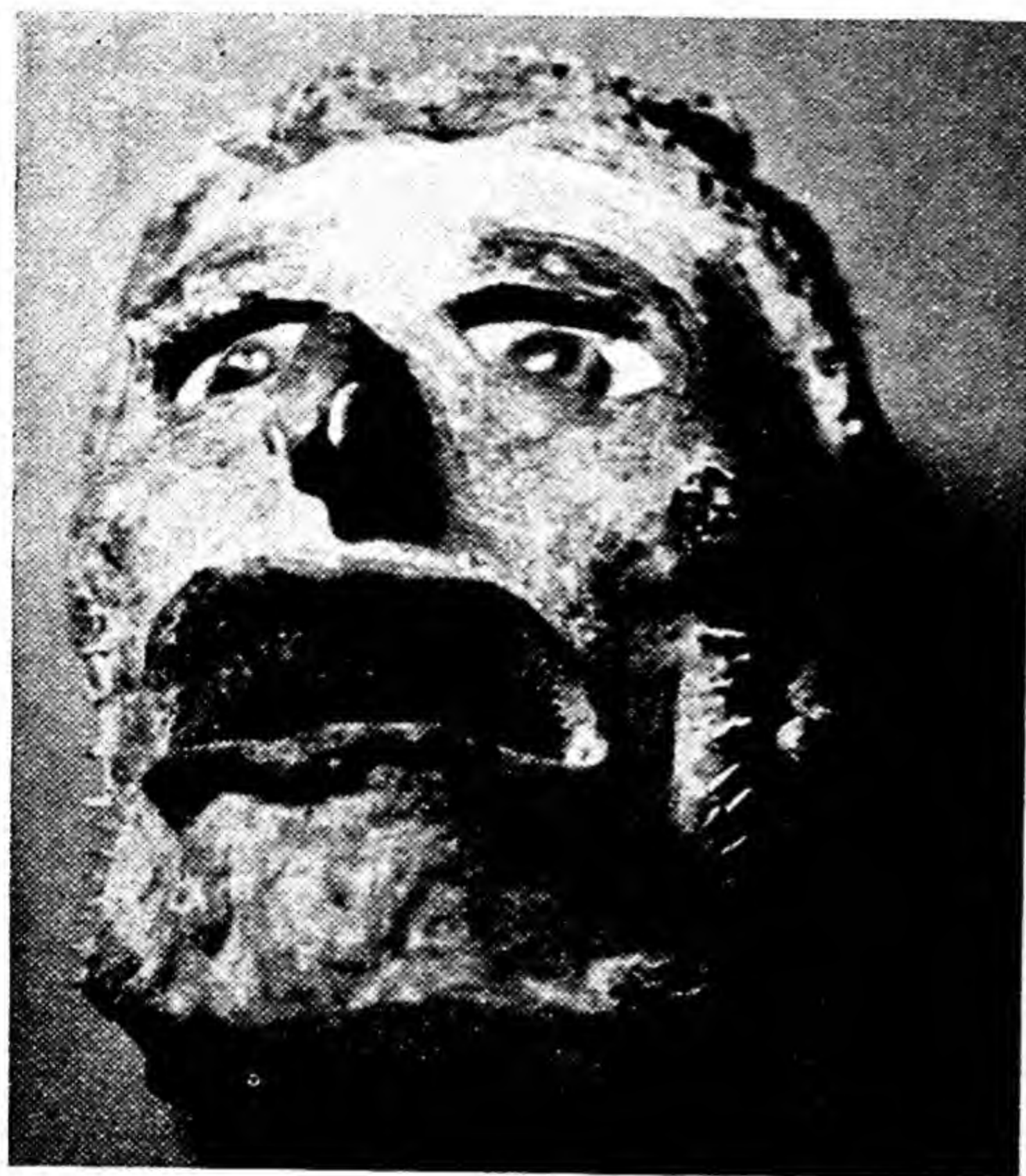
This desire to make use of the powers located in the skull leads not only to the custom of preserving the heads of one's own deceased family members, but to the desire to obtain as many heads as

possible, even from strangers. Men, women, and children of other tribes may be killed for the mere purpose of obtaining such heads. Melanesia and South America are the regions where head-hunting is practised for this reason, and the scalps of the North American Indians are magic tokens whose high evaluation goes back to the same idea. The stronger and the more prominent the victim,

the greater are the magic powers of his head or skull.

Not only the skull but also the soft parts of the head are preserved and carefully mummified, a custom most highly developed in the preparation of the famed head trophies of the Jivaro Indians.

Only warriors who have killed an enemy and have dipped their spears into his blood have the privilege of preparing such trophies. The hair of the victim is carefully parted, and an incision is made from the forehead to the base of the skull, whereupon the skin is pulled off the skull, in which only the eyes and the tongue



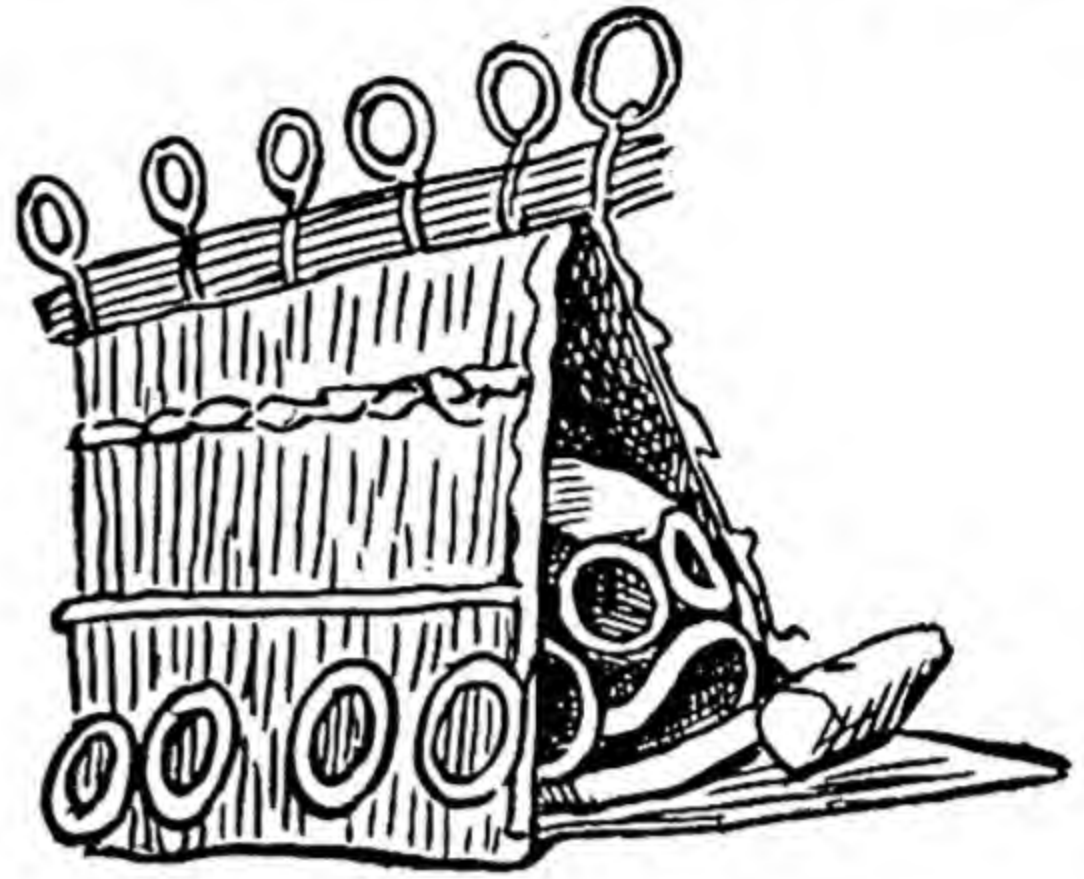
PAINTED SKULL, MODELLED WITH CLAY

New Ireland

Museum of Ethnology, Cologne

remain. The soft parts are then sewn together with fibre thread; the lips are firmly united with bamboo splints. Only the neck opening remains unclosed. The skin bags are now heated in water and removed before the boiling-point has been reached. At this stage they are shrunk to about a third of their original size. The medicine men of the tribe, who supervise every detail of this ceremony, now give the signal that the final preparation of the head may begin. Hot sand is poured into the neck openings and the stuffed heads are 'ironed' with hot stones, a procedure which is repeated for about forty-eight hours, until the skin has assumed the smooth, hard, and tough consistency of leather.

"The whole head," says Up de Graff, who furnishes a detailed description of the procedure, "has now the dimensions of a good-sized orange. Its likeness to the living person is extraordinary. In fact, the shrunken heads are exact miniatures of their former selves. Every trait, hair, and scar remains unchanged, and even the facial expression is preserved." Since the hair maintains its original length it forms a long mane, effectively framing



SKULL RECEPTACLE

Eastern Melanesia

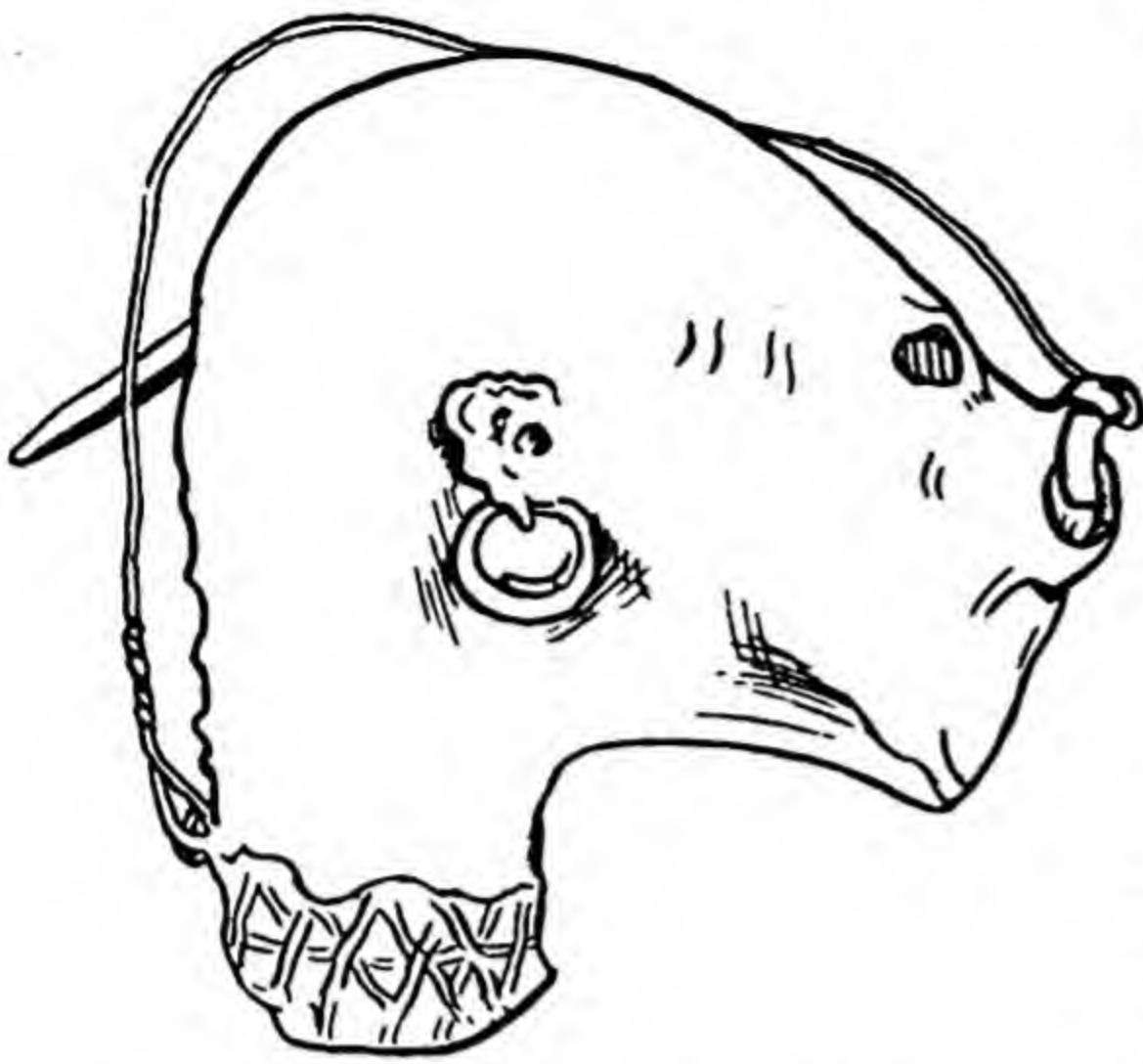
Museum of Ethnology, CologneJIVARO HEAD
TROPHY*After K. Weule*

the strikingly preserved face, and whoever has an opportunity to see some of these trophies in the museums of the world will marvel at the lifelike impression they make, despite their horrible origin and the gruesome method of their preparation.

The lifelikeness of the New Guinean stuffed heads cannot equal those of the Jivaro trophies, but their appearance is equally impressive. The Dorro head-hunters who shape these heads stuff them with bark and coconut fibre; they pull out the hair of the head, and fill the orbits of the eyes with clay.

The belief of the agriculturists in the supernatural powers of the head led to the development of carved masks. These are representations of the dead. The dances during which they are worn are not only for the purpose of worshipping the spirits of the dead, but even more for the purpose of turning their magic powers into sources of benefit and strength for the community.

These magnificently carved masks of the primitive agriculturists are, perhaps, the highest expression of their art and symbolism. Some African specimens have the appearance of Gothic saints. Others, especially of the South Seas, show whole arrays of symbolic animals and ghosts. The famous *malagans* of New Ireland are real



STUFFED HUMAN HEAD

New Guinea

After A. C. Haddon

This is always retained by the family. It is their intermediary between earth and the land where the departed spirits reside.

But not only do the souls of the dead wander; even the souls of the living are not necessarily bound to their main seat, the head. A soul may leave its body at any time, as proved by dreams, those adventures of the wandering spirit. This belief lives on in the sagas and superstitions of all peoples, from Greece and Rome to the backward regions of present-day civilizations, where we find old tales describing a mouse, a bumble-bee, or similar creature that departs from the mouth of a sleeper, carrying his soul to the scenes of his dreams, and returns upon his awakening.

or symbolic representations of the souls of the dead. They are known by the individual names of the departed. The base of the long pillar of carved images is most often a pig's head—the gift of honour of the relatives to the deceased.

The close relationship between skull-and-bone worship and the carved mask is illustrated by a custom of the Nor-Papua of New Guinea, who immediately after a burial lay a richly decorated carved mask on the place of the departed, which is honoured in his stead until his lower jaw can be secured from the grave.



WOODEN DANCE MASK

Southern Congo

Museum of Ethnology, Cologne

By means of magic, it may also happen that a foreign soul may enter the body of a sleeper and cause the state of mind which we call insanity.

When a person dies his spirit has permanently left the body, often because an evil magician has driven it away. For this reason the search for the guilty one who caused the death is a very frequent feature in the agricultural societies. The spirit of the dead person still lingers near his body, especially before burial, and only after a second, final burial which takes place when the flesh has decayed can this spirit or soul travel to the land which the gods have established for the departed. Often other souls come from the Beyond as a reception committee to lead the new dweller safely into the land of the Hereafter. Thus, the Apache dead were met by owls who called to carry their spirits away to the happy hunting-grounds. Sometimes the dead person pays formal good-bye visits to his remaining friends and relatives. On Ponape, his body before burial is carried round from hut to hut, receiving at each stop the loud lamentations of the survivors. A man takes his paddle with him to his grave, a woman her loom. A little hut is erected over the place of burial, where the nearest relative sleeps for five or six nights, after which the hut is removed and the mourners with their reverently clipped hair return to their daily routine.

The search for the 'guilty' is especially elaborate among the Pangwe, where the funeral ceremony is the opportunity to find out whether the departed himself was perhaps a magician who might have caused the deaths of others. If this should be the case the *ewu* will be found in his entrails, an evil thing that sets the deceased apart as a demonic wizard who is not entitled to the same type of funeral as the 'good' men who are 'sons of the light.' To clarify the situation, the medicine-man or *môt a l'ñ* ('the man who cuts open') is the most important officiant at the funeral ceremony. But before he does his duty an older man steps forth from the large crowd of the mourners to deliver the funeral oration, whose climax is an invitation of blood revenge if the 'guilty party' who caused this death should be identified. After this the body is brought to the centre of the gathering on a large piece of bark. His clothes and bracelets, neck-rings, etc., are removed, and he is carried into the plantation behind the houses, next to his open grave, which is laid out with fresh leaves.

Now comes the great moment for the medicine-man to decide whether the deceased was a 'son of light' or an evil magician. He opens the body, examines the entrails, and proclaims his verdict. According to his findings, the dead man now receives the careful

funeral of the 'good' in a bark coffin, or his body is hastily disposed of in the manner reserved for the 'evil.'

The relatives mourn a deceased person by wearing dry leaves instead of their usual garb ; by shaving their heads, abstaining from sexual intercourse, and confining themselves to their houses. Occasionally their faces and bodies are painted white, the colour of death.

The soul of a dead Pangwe may linger on earth in the shape of a wild animal, to wreak vengeance upon the person who caused his death. On the other hand, the soul may be kind. When, for instance, the loving father of a poor son dies he may sacrifice his next life for his son by transforming himself into a tiger and allowing his son to kill him, and therewith kill his soul. By this sacrifice he enables his son to sell the valuable skin and bones of the tiger and buy himself a wife. Before a dead Pangwe follows the invitation of the ancestral souls to travel with them to the land of Nsambe (he recognizes their presence during his last agonies, and greets them with a "There they are !") he may stay for a time near the shadows of the trees, where one can hear his whisperings at night. After about a year the survivors assume that he is ready to leave for the land of Nsambe. His best clothes are ceremoniously displayed near his hut, and the occasion is celebrated with a joyous festival, where dances and big meals are the order of the day.

The land of the souls, ruled by Nsambe, the creator-god, is a pleasant place, patterned after the model of the earthly existence, but perfected in every sense. Nsambe gives to the souls gigantic plantations, animals, and woods. Food and many women are at the disposal of the happy community. The 'bad' are pardoned, and everybody has a magnificently good time. Even the souls, however, grow old, and they cannot stay in heaven for ever. So Nsambe, "who cannot stand ugly things," kicks them out of his land when they become decrepit. Falling down upon the land of the Pangwe, they remain there, weak and invisible. Only some animals sense their presence, especially the termites, who build their hills over the 'bodies' of these weak old souls. When the termitary finally crumbles to dust, it means that the soul has returned to its original substance, the dust, from which also sun and moon and earth once originated.

The departed now lives on only in his skull which has been exhumed by his family to join the other, older skulls in the skull drum in the hut. In times of stress, when Nsambe has sent illness or bad harvests, the skulls are taken out, led about in a sacred dance, and implored to put in their good word with the Pangwe god. If

this appeal does not help the skulls fall into disgrace, are threatened and insulted, and put away for a long, long time.

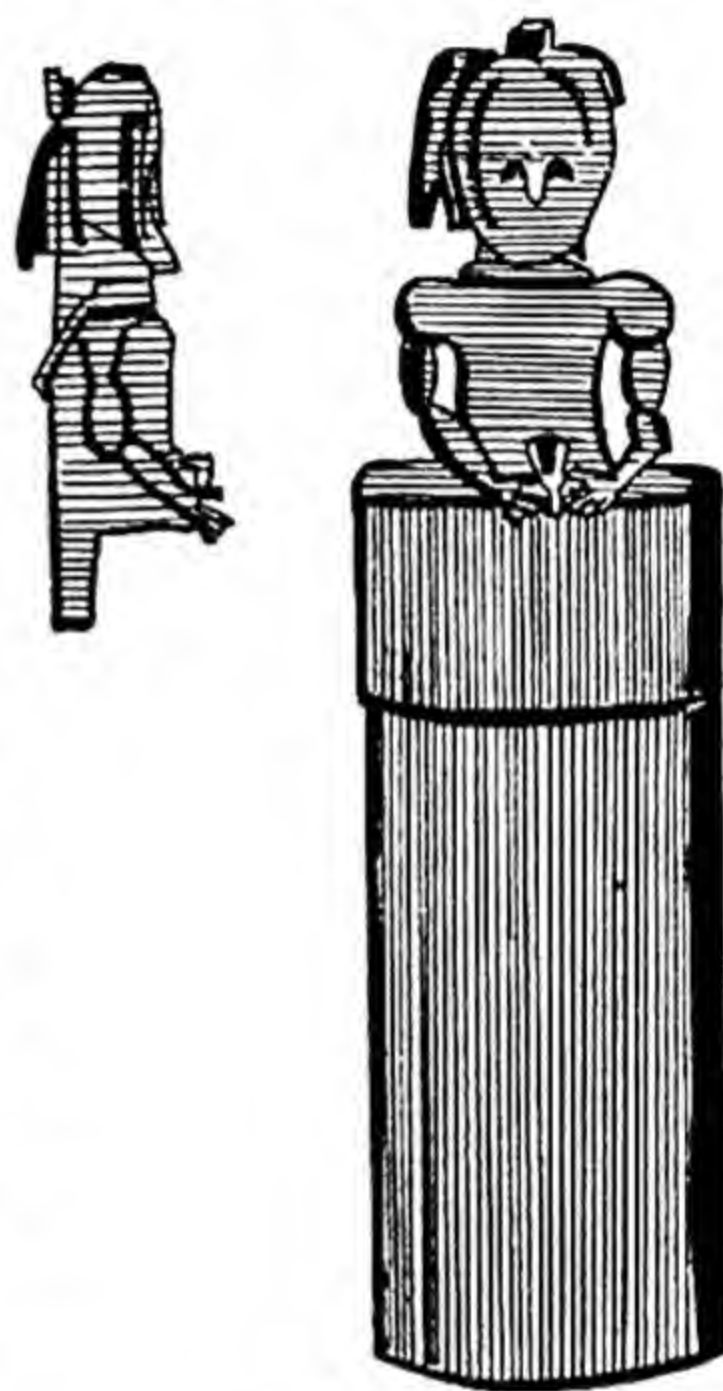
Parts of termitaries are sought after as amulets and good-luck charms, because they contain some of the powerful soul substance of the dead. The belief that termites are the souls of men is widespread, especially in the South Seas.

Dances in celebration of the departure of the dead are a general custom of the agriculturists from Africa to the South Seas, and in America. They are generally held about a year after the first burial.

To appease the dead, token figures or the actual belongings of the deceased are buried with them so that they may be equipped in proper fashion for their journey into the other land. Many tribes destroy all earthly possessions of the departed, not only to show him that they have no intention to 'rob' him, but to destroy at the same time all possible substances of 'infective' death.

The Algonquian tribes of New England killed the precious dogs of a dying man so that they could arrive before him in the other world. The fatally sick man even delivered his own funeral oration by reciting "his good deeds, giving some directions to his family, recommending his friends, and, finally, saying adieu." His friends showered him with gifts while banqueting on his food and assuring him of their grief with wild cries. When he finally died they swathed the body, tied it up in skins "with the knees against the stomach and the head on the knees, as we are in our mother's womb," and buried him in this position, together with all his possessions—bags, bows, arrows, dogs, and a multitude of additional gifts provided by the mourners.

Many of the wooden ancestral figures of the agriculturists show the typical crouching position of the dead, and many prehistoric skeletons have been found in this position. The Hopi, after washing the hair of their dead with a yucca fibre concoction, fix the corpse in a sitting position, with flexed knees and arms and tied with yucca if necessary. The departed is then decorated with 'prayer feathers'—one in the hair, one placed under each foot 'to take the body to the other world,' one in each hand, and one over



SKULL DRUM OF THE
PANGWE

After G. Tessmann

the navel, 'the place where the breath of a man lives.' A deep grave is dug, and the man is interred, facing towards the west. "The hole is rapidly filled in with sand, and a stick of any sort is placed on the grave to serve as a ladder for the breath to depart westward," as Beaglehole reports.

The same idea of making it possible for the soul to leave the grave or to return to it is expressed in the New Guinean custom of putting a bamboo cane on the head of the buried. Although his ancestors and his totem animal have called for the soul immediately after death to take him to the better place, his spirit might like to return from time to time to his old form in the grave.

Closely related to the practice of burying the dead in a crouching position is the use of large urns, baskets, or the like, as coffins. The Tupi tribes of South America put their dead in large clay urns to keep them safe from the soil and to make sure that the spirit of the dead does not return. Often the bones are cleaned afterwards, painted, and preserved in special baskets. The Bororo paste feathers on the bones of their dead, and celebrate their memory in elaborate feasts. The personality of the departed is dramatically revived by actors, to appease the spirit. Urn funerals, as the first or second (after the bones have been cleaned) burial, are frequent also among the Chiriguano and elsewhere.

Some interesting details about the way in which a departed Dusun of Borneo is placed into his funeral urn have been described by the explorer Staal, who saw the little hut of bamboo frame erected over the corpse immediately after death.

Brass-ware, ornaments, precious cloth, are laid around and on top of this hut. Friends and neighbours lament their staunch friend, true neighbour, who could drink so well and even when drunk was kind and not a fighting man. At night two men watch and keep themselves awake by beating gongs and courageous by taking deep draughts of their 'champagne.' The third day the corpse is put in a jar. When one sees the jars one wonders how in the world it is possible to get a full-grown person in it. The top of the jar is cut off at its greatest circumference with sharp knives. The feet are put in first, the knees bent, and the body is pressed down. The head is bent forward on the knees, or between them. The top is again put on and fastened with resinous matter and clay. The priestess waves a burning and smoking piece of wood over the coffin, chanting her unintelligible jargon. This is done to prevent the soul of any of the bystanders from escaping into the dead-receptacle.

Since no burial may take place when the moon is full or just before the new moon the jar coffin is often kept in the house for a

long time. People do not mind the 'pestiferous air' nor the flies and eat, drink, chat, and sleep there until the day comes when the jar can finally be buried in the earth.

The African Djur bury in a cowering position only those who die in the fight 'with man or beast.' Children and those who die in their beds are buried in a horizontal position. The grave is fenced in and cared for "until the termites have eaten it, whereupon it is forgotten, together with the human being it sheltered."

Related to the burial in urns or jars are the graves in the mounds of the American Indians in the upper Mississippi Valley and elsewhere. These mounds, however, cannot be older than a few centuries, because among the thousands of cultural objects which surround the dead in their jars or stone-lined graves are some objects obviously of white man's origin. The reason for this type of burial is given by Keating: "The graves were placed upon mounds in the prairies, this situation having doubtless been selected as being the highest and least likely to be overflowed."

The desire to protect the dead from the unfriendly influences of the soil, water, cold, and even from decay itself, has also led to the practice of preparing the body so that it will not be subjected to further changes or damages. This is the idea of mummification, the earliest forms of which are drying or smoking of the body, as practised among the early harvesters. On the Gilbert Islands the mummies remain within the family circle for a long time. They take part in the dances of the people, are carried around, and enjoy all the attentions due to an honoured guest.

An elaborate example of mummification as described by Manker is the treatment of the dead among the Belgian Congo Babwende, who prepare an important man or chieftain for his funeral by transforming him into a *niombo*. This is done immediately after death. The mourners in bast hats and old, ragged cloths, their faces painted red and black, hang the corpse on a tow under the roof of the deceased's hut over a fire which burns day and night. The funeral watch and the drying procedure go on for months, until the last trace of moisture has vanished from the body.

In the meantime mountains of bast mats, cotton cloth, and similar materials are collected from the friends and relatives of the deceased "so that he does not have to enter the Other Land as a poor and disregarded pauper." The professional *niombo* master is now called to the hut. He arrives with the head of the *niombo*, on which he has worked since the man died. It is a work of art, sewn from red cotton and stuffed with grass and similar materials. "The features are lively, the cheeks softly rounded, the thick-lipped

mouth is open to show the filed-down teeth, the eyes are effectively encircled in red and black. A handsome beard decorates the chin. The black, dry corpse of the departed is now wrapped by the *niombo* master with the hundreds of yards of material into a gigantic



NIOMBO

Funeral Effigy, containing Man's
Body

Babwende, West Africa

After E. Manker

bundle. Arms, legs, and feet are added and skilfully supported by an inner structure. The tattoo of the deceased is painted on the chest of the effigy. When it is ready the *niombo* is bigger than a house."

On the day of the burial the whole village takes part in a huge banquet, after which a group of men carry the *niombo* to the funeral dance, in which he is whirled around high above the huts. Suddenly the whirling stops. Silence befalls the mourners, and the funeral cortège leaves the village, following the gigantic red-painted figure wobbling on its supports. When it is lowered into the grave in a standing position everybody present makes a jump in the air—he who does not or cannot jump will follow the *niombo* very soon. All help to fill the huge grave, the top of which is decorated with the departed's tools and gadgets. The dead man's house is then burned down.

Where does he go? To a place of bliss, as a respected, influential man. There is no doubt that the generosity of his friends and family, who sent him off in so prosperous a manner, will impress his fellow-dwellers in the spirit land.

The distant country to which the soul travels after death is, in the belief of the agricultural peoples, by no means a realm of dread. The spirit lives on under conditions comparable to those of his earthly existence, but unmarred by its frequent sorrows and mishaps. The dead live in communities patterned after those they

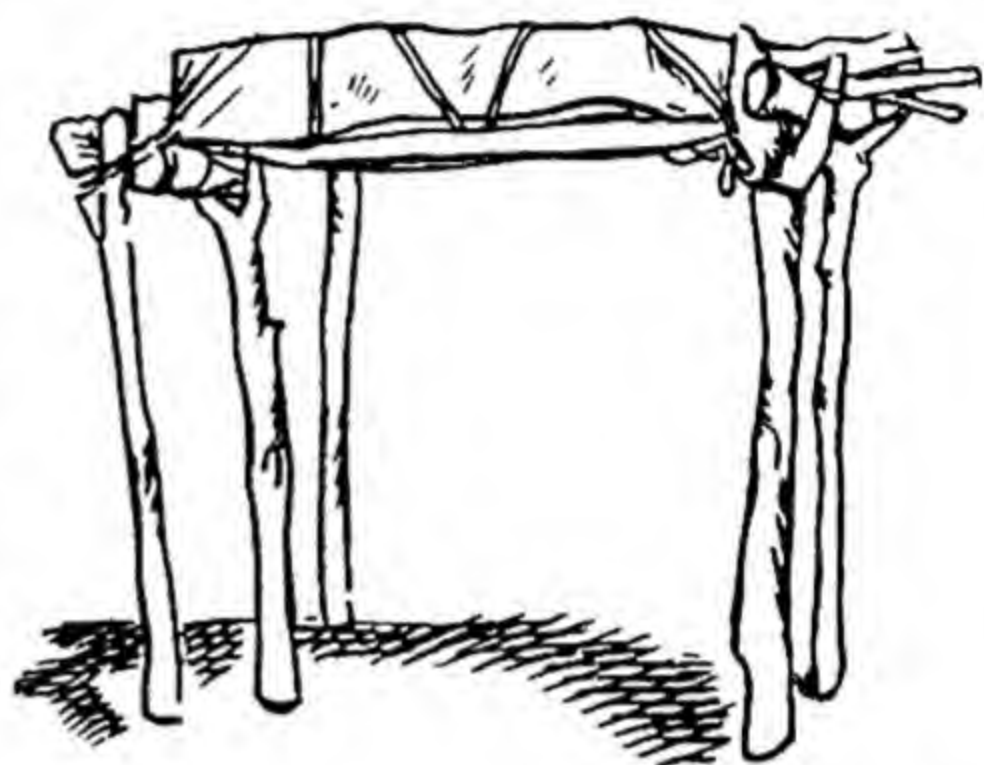
left behind. They plant and harvest, fight and love—all under ideal conditions. Agricultural peoples know what to expect in their next life ; speculation and painful uncertainty are alien to them.

Different indeed is the conception of death found among the herdsmen and the Polynesian tribes, who both developed the idea of the individual to a much greater degree than the community-bound societies of the agriculturists. Their belief in a general survival of the spirit of the dead is much less accentuated, and their emphasis on classes or castes regulates their ideas of the hereafter. While the nobles and the chieftains can look forward to a continuation of the privileges they enjoyed on earth after death, some parts of the population are denied any spiritual survival whatsoever.

Only the Polynesian rulers of Tonga are immortal, while the common men cease to exist at the moment of death. Many African herdsmen grant a spiritual existence after death only to the chieftains and the medicine-men ; the common people and especially the women cannot hope for a continued spiritual life. In general, death means destruction, and a survival in other forms is the exception.

Traces of this attitude are evident even among harvesters like the Australian Aranda and Loritja, whose souls go to a land of the dead, but only for a short time, and are destroyed soon thereafter. Among the pre-Islamic Arabs and among the ancient Jews the idea of a life after death was very limited. The strong accent on the importance of the living individual seems to create the idea that death is an inevitable end to his activities.

The worship of the sun, the typical feature of the father-right cultures, leads to a special emphasis on platform and scaffold graves, so that the departed may find himself exposed to the rays of the holy light as long as possible. For this reason, many American Indians lay their dead to rest on scaffolds or in trees. Many wooded sections east and west of the Mississippi Valley contain regular cemeteries where the bodies of the departed, carefully wrapped in mats or skins or birch bark, tower on trees and scaffolds. Skulls of sacrificed animals, gifts of tobacco, and bows and arrows adorn the lofty graves. Even under the influence of Christianity



SCAFFOLD BURIAL OF CHIEF
CRAZY WOLF
Crow Indians

After D. I. Bushnell, Jr.

many an old tribe still sticks to its ancient burial methods. They adhere to the wish of old Spotted Tail of the Sichangu to go "not where the white people go but where the red people go."

Often the type of burial is determined by the way in which the departed met his death. The Missisauga, for instance, buried the dead hunter on a very high scaffold, while those killed in war were cremated and their ashes carried to the burial grounds near the village. The custom of the Cheyenne of burying their dead on scaffolds in travois baskets is a fitting symbol of the way of life and death of a roaming plains tribe.

Burial on platforms and scaffolds has deeply influenced the later customs of the highly-cultured peoples, especially of the Parsee of India, whose Zoroastrian conceptions led to the idea of keeping the corpse from any contact with the soil. In their 'towers of silence' the dead are exposed to swarms of vultures that skeletonize the bodies to spare the flesh from decay and, at the same time, to keep the worshipped flames of the fire free from devouring the unclean substances of the human body.

Similar was the purpose of the so-called 'corpse-devouring' sarcophagi of Assos, which Plinius describes as "eating the bodies of the dead within forty days." Such stone sarcophagi still stand on the *pedestales* of Assos. Modern science has proved that they were lined with aluminic lime and that they were not closed firmly enough to prevent blow-flies and their brood from penetrating the small clefts—insects of which Linné said: "A fallen horse is quicker devoured by the descendants of three blow-flies than by a lion."

Disregard of the dead body as a discarded shell without further purpose and significance led in many tribes of herdsmen and related societies to the simple abandonment of the corpse wherever it fell, a custom which can be found especially in East Africa. Related to it is the Polynesian practice of leaving the dead bodies put away in caves without taking any special care.

These same people, who have so little use for the corpses of their departed, nevertheless often try to preserve the mortal remains of their nobles and rulers in a very permanent fashion. The custom of preserving these bodies, however, does not originate from the desire to worship the dead body as a container of an immortal, magic soul. Rather it is meant to extend the recognition enjoyed by the individual during his lifetime, by transforming him, so to speak, into a memorial monument of himself. This preservation is done by mummification.

In younger complexes of the patriarchic cultures a marked

preference for cremation becomes more and more evident. It also symbolizes the idea of the finality of death. In many regions, as, for instance, in Polynesia, only the noble and prominent ones are entitled to such funerals, and the type of pyre varies with their rank. India and eastern Asia have accepted this type of disposal of the corpse as part of their religious rituals ; and the public cremations of the dead, especially along the Ganges, belong to the sacrosanct Hindu customs.

The arctic peoples of America and Asia, whose culture consists of a blend of many diverging influences, are closer to the animistic world of the agriculturists than to the feudalistic conceptions of the father-right peoples. To them, not only man and beast, but also tree and cloud and stone and river, are enlivened by spiritual forces ; and the dead body too is alive with magic forces capable of influencing dangerously or favourably the living. Because of their mixed cultural development, the arctic peoples have adopted the burial methods of almost all other societies, including interment and the weighting down of the grave with stones ; simple abandonment of the corpse which is eaten by the animals of the wilderness ; the destruction of the dead by fire, and scaffold burial. The Gilyaks and Chukchee cremate their dead, collect the ashes, and erect small huts over the remains, which are worshipped by relatives. The Mongols, on the other hand, sit by and watch the dogs tear apart what was a human being just a few hours ago.

It may be worth while to dwell briefly on the burial customs of a culture as highly developed as that of the Natchez, those extraordinary people, now extinct, who once inhabited the lower Mississippi Valley. Whether or not the dead of their lower caste, or Stinkards, were treated in any special fashion has escaped the attention of the ancient writers, but it is known that the funeral of a Sun, a noble chieftain, certainly was a remarkable event. Gravier, a Jesuit father, and Pénicaut have furnished exciting descriptions of such funerals, during which many innocent lives were sacrificed for the glory of the departed—not only cooks and skilled attendants who had to continue their services in the next world, but also small children sacrificed by their own parents.

In 1704 a great female Sun died, and her husband, who came from the ranks of the Stinkards, was immediately strangled so that he could accompany her to the Great Village of the Dead. Both were bedded on a triumphal car in their cabin, and fourteen scaffolds were erected in the public square, each attended by a festively garbed man, a *moriturus*, who had pledged his life to the deceased while she was still alive. Each of the fourteen men

himself wove the cord with which he was to be strangled ; each had his face painted vermilion and was attended by five servants. " At the end of four days," records the ancient author, " they began the ceremony of 'the march of the bodies.' " Fathers and mothers of twelve children under three years of age strangled their own offspring with their bare hands in honour of the departed, and 'decorated' the noble bier with the tiny bodies. The funeral cortège was preceded by the fathers who carried their dead children. Finally the fourteen pledged men were strangled by the singing relatives of the dead chieftainess.

The custom of killing human beings for the 'comfort' of the departed is a phenomenon encountered especially in the high cultures. It springs from the habit of picturing the hereafter similar to earthly existence. The Chinese heaven and hell know whole hierarchies of 'government' officials, just as on earth. In fact, no people is capable of imagining a Great Beyond in which the fundamental conditions and blessings do not correspond to the patterns deemed desirable on earth. During the ceremony canonizing a saint the Pope appeals " to all of the heavenly court."

The concept of life after death developed especially in the animistic ideas of the agriculturists, with the later addition of ethical evaluations. The class and caste concepts of the herdsmen are reflected in the desire to equip the noble traveller as completely as possible for the long trip to the next land.

Fettering of the dead is as old as the phenomenon of death itself, and there is hardly a prehistoric grave in which some precaution was not used to hinder the dead from escaping and reappearing. Often some bones were removed and others added to 'confuse' the corpse ; its head was turned towards the ground, or purposeful mutilations were performed, in the same way that to-day's primitives tie the hands of a corpse to the neck, weight the grave or fence it in with barricades, behead the body before burial, build mock paths away from the village, or tie the deceased into his coffin so firmly that he cannot leave his place of confinement.

The ancient Egyptians were especially careful in this respect. Their fear of Achu, or Chu, the returning dead, inspired many methods of precaution. When the priests described the hereafter as a place of glory nobody could believe that its joys could possibly measure up to the joys of Egypt, and sheer force was used to prevent the Achu from returning. The dead were decapitated, subjected to ruses of all kinds, vital organs like heart and brains were removed.

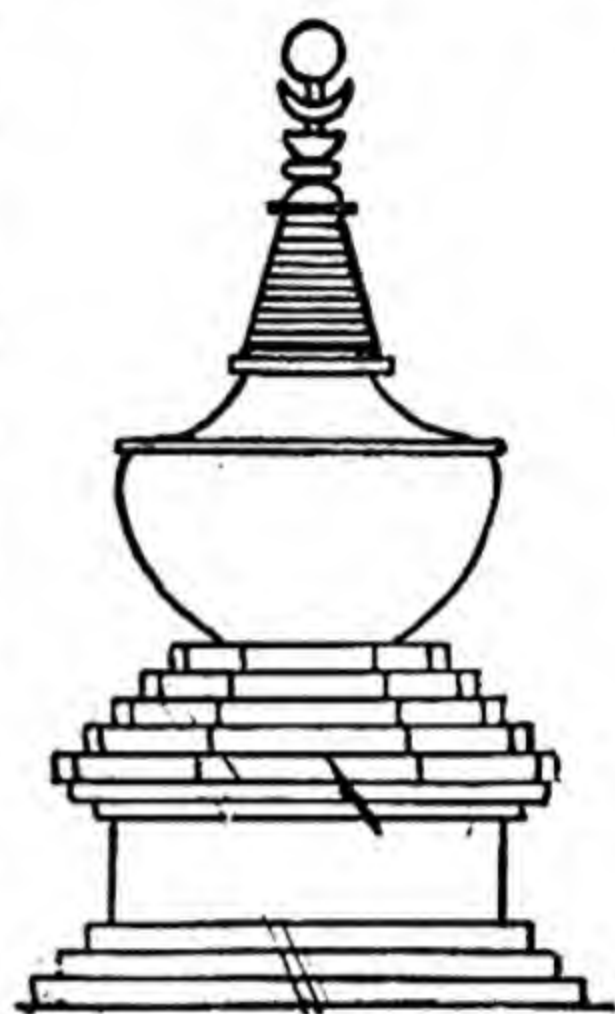
From fettering the corpse with knotted strings developed the

artful wrapping of the mummified body with yards and yards of bandages, the ends of which were closed with complicated knots and often sealed with images to frighten the spirit and thereby restrain the *Wanderlust*. The Egyptian coffin, which closely follows the contours of the human form, was supposed to have the effect of constricting armour; furthermore, it was closed with ingenious locks impossible to open from within. In addition, many of the inscriptions in these coffins praise the comforts of the hereafter so vividly that the dead who might have planned an escape would be persuaded to remain in their coffins.

The Incas of Peru mummified their rulers and buried them in full regalia in a crouching position. They were firmly tied into a square-shaped bundle. Sometimes such a bundle contains several bodies on which an artificial head was mounted to give the impression that it was only one mummy. These preserved dead bodies were said to have magic qualities, and were carried along for good luck in wars. Some of the mummies of the Inca rulers, decorated with golden masks, precious bracelets, and gorgeous hair ornaments, sat on golden chairs in a circle round the picture of the Sun Temple in Cuzco. The Aztecs, also, mummified their most noble dead and the warriors killed in battle and the women who died during childbirth. These alone were reborn to spiritual life in the sun.

The dead Chibcha rulers were buried in hidden graves, fully equipped with bags containing cocoa and jars filled with *chicha*, and surrounded by the bodies of their killed wives and servants. The many mock entrances and labyrinthine paths within the Egyptian pyramids had the same purpose: to hide away the magic mummies from possible intruders who might steal the bodies and their treasures, and benefit from their mystical powers.

In Tibet we find the typical dual father-right methods of complete destruction of the corpses of the common people, and preservation of the corpses of the nobles (especially the Lamas) by mummification. While holy bodies are kept in sacred mummy containers which often have the shape of small temples, the corpses of the common people are offered to the wild animals. If birds pick at them and carry them away the soul will go to heaven; if pigs or dogs devour them it indicates a rebirth on earth. If



TIBETAN CHORTEN
CONTAINING ASHES
OF A LAMA

After Forstmann

the dead person is quickly devoured it means he was a good man—if he isn't, it indicates the opposite, and he must expect stress and punishment. The trumpets and drums of the holy Lamas, fashioned from human bones and skulls, indicate the antiquity of animistic beliefs in the religions of higher cultures ; and the custom of addressing the departed soul springs from the old idea that the dead are able to listen, although they have no means of answering.

The custom of indicating a state of mourning by outer symbols is equally ancient. Painting the face white or black is supposed to trick the dead into the belief that the mourners are ghosts, and not living creatures to be envied. The restrictions to which the survivors submit themselves are meant to appease the grief and jealousy of those who can no longer be with them.

As to the general attitude of modern men toward the phenomenon of death—it often strikes us just as unpreparedly as it does the victim of witchcraft who dies in the jungle. Whether we are happy or unhappy in the knowledge that “this, too, shall pass” is determined by the degree of soul substance which we may or may not possess. Whatever we believe, so much is sure : that, in the words of an ancient Tibetan book, “Nothing but emptiness comes from an empty room,” and that only those who believe are happy. The form of our beliefs is not of such paramount importance, as long as they are carried out with integrity and conviction. Whether we picture the Great Beyond as a form of individual immortality or as a dissolution into a greater spiritual entity, whether we expect to fly on the wings of birds to the sun or hope to be care-free and innocent like the reed—our passing will be a peaceful one if our lives have been directed by the one impenetrable Source who alone knows the significance of stress and bliss, of life and death, and the origin of all things.

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